



THE STATE OF EARLY CHILDHOOD HIGHER EDUCATION IN CALIFORNIA

TECHNICAL REPORT
OCTOBER 2015

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CENTER FOR THE STUDY OF CHILD CARE EMPLOYMENT
UNIVERSITY OF CALIFORNIA, BERKELEY

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The Center for the Study of Child Care Employment (CSCCE) was founded in 1999 to focus on achieving comprehensive public investments which enable and reward the early childhood workforce to deliver high-quality care and education for all children. To achieve this goal, CSCCE conducts cutting-edge research and proposes policy solutions aimed at improving how our nation prepares, supports, and rewards the early care and education workforce to ensure young children's optimal development.

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CHAPTER 1: INTRODUCTION

Teacher preparation in the field of early childhood education (ECE) has historically included a variety of higher education degree programs, in various child-related disciplines, all of which have generally been considered equally acceptable. And too often, these highly diverse degree programs are assumed to produce equivalent results (Maxwell, Lim, & Early, 2006; Whitebook et al., 2012). In contrast, programs to prepare teachers and administrators to work with older children reflect far greater uniformity and stringency related to specific preparation standards and certification requirements. In recent years, however, rising expectations about the knowledge and skills that early childhood practitioners need in order to work effectively with young children before kindergarten, along with the introduction of new ECE programs and standards, have led many to question whether the current wide array of ECE-related degree programs can be assumed to produce equivalent results.

In California, despite progress over the last decade in aligning early childhood education courses at the community college level, there remains great variability among upper-division and graduate degree programs regarding what constitutes an appropriate course of study for teachers and administrators serving young children.

To address this issue, the *Early Childhood Higher Education Inventory* (Kipnis, Ryan, Austin, Whitebook & Sakai, 2012) was designed to gain a clearer picture of the early childhood-related offerings in a given state's higher education system. The Inventory describes early childhood degree programs offered in the state, focusing on variations in program content, age-group focus, student field-based learning, and faculty characteristics.

In addition, a series of questions developed for the Inventory focuses specifically on the issues of early mathematics and family engagement, with particular attention to program content and faculty attitudes. While the link between young children's math competency and later school success has been demonstrated in recent research, there is concern that institutions of higher education are not adequately preparing teachers of young children to assess or facilitate children's mathematical understanding and skills (Ryan, Whitebook & Cassidy, 2014). Additionally, given research evidence that family involvement in children's learning at home and at school contributes to school success (Dearing & Tang, 2010; Reynolds & Shlafer, 2010), we were interested in learning the extent to which ECE higher education programs are addressing the topic of family involvement.

Further, California's 2010 Kindergarten Readiness Act introduced Transitional Kindergarten (TK) for four-year-old children, essentially adding a new grade to the public school system.¹

¹ For more information about Transitional Kindergarten in California, see <http://www.cde.ca.gov/ci/gs/em/kinderfaq.asp>

Since TK teachers are required to hold the same credential as teachers of older children, we expanded our investigation to include multiple subject credential programs, in addition to ECE degree programs.

The totality of the data collected through the Inventory allows stakeholders to identify gaps and opportunities in the available offerings, and to assess the capacity of the state's higher education system over time.

The Inventory was implemented in California during the 2013-2014 academic year. This Technical Report presents detailed findings collected by implementing the Inventory's mapping, program, and faculty modules (Kipnis et al., 2012). The report also includes a full discussion of the findings, and offers recommendations for policy and practice.

METHODOLOGY

Mapping Module

Through an extensive document review, the Mapping Module identifies the state's early childhood higher education programs by collecting information on each college or university, the departments in which programs are housed, degrees and certificates offered, and characteristics of the students attending the programs.

During the spring and summer of 2013, CSCCE compiled a comprehensive list of institutions offering early childhood degrees and/or multiple subject credentials and accredited by the Western Association of Schools and Colleges (WASC). To compile this list, we relied on several sources.

To identify community colleges, our primary source was a list from the California Community College Chancellor's Office of colleges offering an early childhood degree program, including names and contact information for key informants at each institution. For four-year and graduate degree programs, we primarily identified institutions through the online WASC directory,² utilizing the terms *child development*, *child and adolescent development*, *early childhood development*, *early care and education*, *family and consumer science*, and *human development*. To identify multiple subject credential programs, we searched the website of each institution we identified as offering an early childhood degree program in order to determine whether a credential program was also offered, and searched the California Commission on Teacher Credentialing website to identify Commission-Approved Professional Preparation Programs and key contacts.³ Since this research was focused on offerings available at traditional institutions of higher education, credential programs offered through local education agencies were not included in the Inventory.

Additional contributors to the above lists included the Child Development Training Consortium, California Community College Early Childhood Educators, the California State University Office of the Chancellor, and Partnerships for Education, Articulation and Coordination.

For each college and university identified, we conducted an extensive web search to identify:

- Early childhood degree and multiple subject credential offerings;
- Departments in which early childhood degree programs were housed;
- Early childhood certificates and other programs offered; and

² <http://www.wascsenior.org/>

³ <http://www.ctc.ca.gov/educator-prep/approved-programs.html>

- Additional contact information for the dean or program coordinator.

A letter was emailed to each contact, introducing CSCCE, describing the purpose of the Inventory, and identifying the Inventory's funding sources as the David and Lucile Packard and Heising-Simons Foundations. We then attempted to contact, via telephone, the identified deans or program coordinators to verify the information gathered through our various sources. Institutions that were found not to offer an early childhood degree or multiple subject credential program (e.g., an identified program was found to focus on developmental psychology, but with no mention of early education or of preparing students to working as classroom teachers) were excluded from the sample.⁴

California's population of early childhood higher education programs

Through this process, we identified a robust population of public and private institutions of higher education in California serving thousands of prospective and current early childhood practitioners across the state.⁵ Appendix A1-1 and A1-2 display the early childhood degrees offered by these institutions.

One hundred and forty-five institutions of higher education in California were identified as offering a total of 266 early childhood degree programs. Among these, 103 were public community colleges, which offered 190 early childhood associate degree programs. Twenty-two private colleges and 20 public colleges and universities offered early childhood degree programs either at the bachelor's or master's level or both. In total, these 42 colleges and universities offered 50 bachelor's degree programs, 29 master's degree programs, and one doctoral degree program in early childhood.⁶ Less than one-half (40 percent) of community colleges offered only one early childhood degree program, an equal percentage of community colleges offered two degree programs, and 20 percent offered between three and five degree programs. In contrast, more than three-quarters (77 percent) of colleges and universities that offered a bachelor's degree program offered only one degree program, 18 percent offered two degree programs, and just five percent offered three degree programs. Similarly, most colleges and universities (80 percent) that offered a master's degree offered only one such degree, 15

⁴ A California multiple subject teaching credential authorizes teaching in a self-contained setting in grades K-12 including preschool and adults.

⁵ Based on information provided by the programs that participated in the Inventory, it is estimated that during the 2012-2013 academic year, 8,553 students were registered in bachelor's degree programs (6,505 in public and 2,048 in private institutions), and 562 students were registered in master's degree programs (216 in public and 346 in private institutions). During this same time period, the public colleges and universities that participated in the Inventory estimated that they conferred 1,520 bachelor's and 113 master's degrees; private colleges estimated that they conferred 396 bachelor's and 235 master's degrees. Cumulative totals for students served and degrees conferred at the associate degree level are not available, as these data are reported as ranges.

⁶ There is one doctoral program in California specifically identified as early childhood education. As data for this one program cannot be dis-identified, program or faculty data collected for that program are not included in this report.

percent offered two degrees, and only one institution offered three degrees. In California, 79 institutions of higher education offered a multiple subject credential program.

Program Module

Using an online survey tool completed by each degree program's dean or coordinator, this module collects information on program content and age-group focus; connections to state standards; accreditation; methods of student assessment; types, sequencing, duration, and supervision of clinical experiences; student supports; and challenges currently faced by the institution.

Sample Development

During the telephone call with program deans or coordinators, CSCCE identified the appropriate person to respond to the Program Module of the Inventory. We then asked the appropriate respondent whether s/he was willing to participate. Of the 145 institutions of higher education offering early childhood degree programs, 88 percent of the institutions agreed to participate in the Inventory. This included 88 percent of the community colleges (n=91) and 86 percent of the public and private colleges and universities offering bachelor's and graduate degrees (n=36). Two-thirds (66 percent) of the 79 colleges and universities identified as offering a multiple subject credential program agreed to participate in the Inventory (n=52).⁷ (See **Table 1.1.**)

For those institutions offering early childhood degree programs at multiple levels (e.g., bachelor's and master's degrees), these programs were surveyed separately. For those institutions offering more than one degree program at the same level (e.g., a bachelor's degree in early childhood education and a bachelor's degree in child and adolescent development), a member of our research team engaged in a phone conversation with the identified program representative prior to sending the online survey, in order to determine the degree of variability among these different degree programs (e.g., some differed only with respect to elective courses) and whether more than one version of the Program Module would be sent to them to complete. A total of 201 program surveys were emailed to the degree programs: 137 to associate, 41 to bachelor's, and 23 to master's degree programs. The final sample consisted of 116 associate, 35 bachelor's, and 19 master's degree program surveys. The response rate for associate and bachelor's degree programs was 85 percent, and for master's degree programs, 83 percent. A modified version of the program survey was sent to each of the 52 multiple subject credential programs that agreed to participate; 47 programs completed the program survey, for a response rate of 90 percent. (See **Table 1.2.**)

⁷ The multiple subject credential programs identified for this survey were limited to those offered through an institution of higher education, and did not include programs offered through local education agencies.

Response Rate

Table 1.1 Population of Institutions of Higher Education (IHE) in California Offering Early Childhood Education Degrees and Multiple Subject Credential Programs ¹				
Program Type	Number of IHE Identified as Offering ECE Degree or Multiple Subject Credential	Number of IHE Agreeing to Participate in the Inventory	Number/Percentage of IHE that Completed at Least One Survey	
			Number	Percentage
Associate	103	91	78	85%
Bachelor's ¹	39	34	29	85%
Master's ¹	20	19	18	94%
Multiple Subject Credential ¹	79	52	47	90%
¹ Duplicated count, as colleges and universities may offer multiple program types.				

Table 1.2
Response Rate for the Program Module of the California Early Childhood Higher Education Inventory

Program Type	Number of Degrees or Multiple Subject Credential Programs Offered by IHE in Sample ¹	Number of Program Modules Administered ²	Program Module Response Rate	
			Number	Percentage
Associate	176	137	116	85%
Bachelor's	45	43	35	85%
Master's	24	23	19	83%
Multiple Subject Credential	52	52	47	90%

¹ This includes only institutions that agreed to participate in the Inventory. See Table 1.1.

² For those institutions offering more than one degree program at the same level (e.g., multiple bachelor's degrees), a member of our research team engaged in a phone conversation with the identified program representative to determine whether one or more program modules would be sent to them to complete. As a result, some institutions were sent one program module to be completed for multiple degree programs at the same level.

Data Collection

The Program Module was emailed to all respondents using SurveyMonkey, an online survey software program. The Program Module for the associate degree programs was open for respondents for approximately 30 days during the fall 2013 semester, and for approximately 30 days for bachelor's degree, master's degree, and multiple subject credential respondents during the spring 2014 semester.

Program Content of Degree Programs

The Program Module for degree programs included closed-ended questions focusing on the following topics:

- Goals of the early childhood degree program related to training students for specific job roles and early childhood settings.
Program content and age-group focus. Respondents were asked to indicate whether topics within the following categories were required in order for students to complete the degree program. For each topic, the respondent was also asked to indicate whether coursework focused on infants and toddlers (birth through two years), preschoolers (three through four years), or children in grades K-3 or higher.
 - Child Development and Learning

- Teaching Diverse Child Populations
- Teaching and Curriculum
- Teaching Skills in Early Childhood Settings
- Family and Community
- Development of Children’s Mathematical Understanding
- Teaching Children Math Skills
- Early Childhood Administration and Leadership (asked if offered, not required).
Coursework alignment with state and national ECE standards, and degree program articulation
Strategies to assess student competencies
Clinical experiences for students, i.e., student teaching and/or practicum experiences:
 - Timing and duration
 - Age-group focus (infant, preschool, early elementary)
 - Supervision: who supervises, criteria for selecting cooperating teachers at the site, resources for cooperating teachers
 - Field sites: criteria for selection
 - Differences in experiences for pre-service and experienced teachers
- Student population
 - Target: Pre-service teachers and/or experienced teachers
 - Number of students enrolled, and number attaining degrees
- Available student services
Challenges facing the degree program.

Program Content of Multiple Subject Credential Programs⁸

The Program Module for multiple subject credential programs included closed-ended questions focusing on the following topics:

- Program content and age-group focus. Respondents were asked to indicate whether topics within the following categories were required in order for students to complete the degree program. For each topic, the respondent was also asked to indicate whether coursework focused on preschoolers (three through four years) or children in grades K-3 or higher.
 - Child Development and Learning
 - Family and Community
 - Development of Children’s Mathematical Understanding
- Teaching Children Math Skills
Coursework alignment with state and national ECE standards
Clinical experiences for students, i.e., student teaching and/or practicum experiences:
 - Timing and duration

⁸ The program module for multiple subject credential programs was limited in scope and did not cover all of the areas included for degree programs. As a result, not all program-related findings include data from the multiple subject credential programs.

- Age-group focus (infant, preschool, early elementary)
 - Supervision: who supervises, criteria for selecting cooperating teachers at the site, resources for cooperating teachers
 - Field sites: criteria for selection, relationship with college or university
- Number of students enrolled
- Challenges related to preparing teachers to work in transitional kindergarten.

Data Analysis

Using SPSS (Statistical Package for the Social Sciences 22), we computed frequencies for all questions, by program degree level or type (associate, bachelor's, master's, multiple subject credential). Data are reported by program level or type, rather than aggregated, as the preponderance of associate degree programs would skew the findings.

Faculty Module

Using an online survey tool completed by all faculty members teaching in a given degree program,⁹ the Faculty Module collects information on faculty employment status, teaching experience and expertise, professional development experiences and needs, and past experience within the early childhood field.

Sample Development

To determine the faculty sample, we conducted a stratified random sample of community colleges and four-year and graduate colleges and universities. (faculty teaching in multiple subject credential programs were not surveyed). The intent was to survey all faculty members employed at each selected college or university. For community colleges, we grouped colleges into the ten regions established by the California Community College Chancellor's Office. For regions that contained five to nine colleges, we randomly sampled one college above and one college below the median student population for the region; for regions with ten or more colleges, we randomly sampled two colleges above and two below the median student population for the region.

The colleges and universities offering bachelor's and master's degree programs were collapsed into four geographic regions, ranging in size from ten to 14 colleges. No consistent student population data were available for all of the colleges and universities, and thus student population was not considered in the faculty sampling frame. Within each of the four regions, institutions were randomly assigned a number, and those numbered one through five were selected in each region. Thirty-two community colleges and 21 upper-division and/or graduate colleges and universities were identified as faculty sample institutions.

⁹ Multiple subject credential program faculty were not surveyed.

For each of the institutions selected to participate in the faculty sample, our telephone conversation with the dean or program coordinator included a request for a list of names and email addresses for all full- and part-time/adjunct faculty teaching in the early care and education degree program. In the limited instances in which a sample institution either did not agree to participate in the Inventory, or it was determined that the program offered was not early childhood-related, a new college within the region was randomly identified for participation. All colleges that agreed to participate sent CSCCE a faculty list, and these names served as the sample universe for the Faculty Module. If the dean or coordinator also taught in the early childhood program, he or she was included in the Faculty Module sample.

A total of 562 surveys were emailed to individual faculty, resulting in an eligible sample of 375 community college and 169 bachelor's and master's degree faculty. The final sample consisted of 255 community college faculty members and 104 bachelor's and master's degree faculty members who completed the Faculty Module. The response rate for community college faculty was 68 percent, and for bachelor's and master's degree faculty, 62 percent. (See **Table 1.3.**) We estimate that our sample represents approximately 17 percent of the faculty population teaching in the community colleges that participated in the Inventory, and approximately 17 percent of the faculty population teaching in the bachelor's and graduate programs.¹⁰ While we cannot assume that findings from this module are representative of all early childhood teacher educators in the state, as documented in the Narrative Report, findings from the Faculty Module concerning course content topics covered and age-group focus were consistent with those from the Program Module.

Data Collection

Each faculty member received a letter from CSCCE describing the Inventory and encouraging participation. The Faculty Module was emailed to all faculty identified for the sample using SurveyMonkey. The Faculty Module for associate degree programs was open for respondents for approximately 30 days during the fall 2013 semester, and for approximately 30 days for bachelor's and master's degree faculty respondents during the spring 2014 semester.

¹⁰ These percentages represent a calculation based on reports by program leads about the number of faculty teaching in their programs. The community colleges that participated in the Inventory reported that their programs were staffed by a total of 1,117 part-time faculty and 343 full-time faculty. Bachelor's degree programs reported that they were staffed by 337 part-time and 140 full-time faculty, and master's degree programs by 101 part-time and 64 full-time faculty.

Faculty Module Content: All Degree Types

The Faculty Module included closed-ended questions focusing on the following topics:

- Current employment
 - Faculty status
 - Primary responsibility
 - Number of courses taught in a typical year
 - Number of students advised in a typical year
 - Primary teaching focus
 - Age-group expertise
- Current teaching expertise. Respondents were asked to indicate whether, within the past two years, they had taught topics within the following categories. For each topic, respondents were also asked to indicate whether the coursework focused on infants and toddlers, preschoolers, or children in grades K-3 or higher.
 - Child Development and Learning
 - Teaching Diverse Child Populations
 - Teaching and Curriculum
 - Teaching Skills in Early Childhood Settings
 - Family and Community
 - Development of Children's Mathematical Understanding
 - Teaching Children Math Skills
 - Early Childhood Administration and Leadership (asked if offered, not required).
- Professional development and experience in the early childhood field
 - Professional development experiences in the past three years
 - Professional roles in the past 10 years
 - Additional professional development that would be helpful
- Resources that would be helpful to the degree program
- Demographics and educational background
 - Highest level of education
 - Credits in early childhood/child development
 - Gender
 - Race/ethnicity
 - Age
 - Language capacity

Table 1.3 Response Rate for the Faculty Module of the California Early Childhood Higher Education Inventory			
Faculty Type	Number of Faculty Modules Administered¹	Number of Faculty Responses²	Faculty Module Response Rate
Associate Degree Faculty	375	255	68%
Bachelor's and Graduate Degree Faculty	169	104	62%
TOTAL	544	361	66%
¹ This number is adjusted for email bounces and reflects the eligible sample from the faculty list supplied by program leads. ² Faculty may teach at one or more degree levels.			

Data Analysis

Using SPSS (Statistical Package for the Social Sciences 22), we computed frequencies for all questions, for each degree program (associate, bachelor's, master's). If faculty members reported that they taught in more than one degree program at their institution, they were included in the analysis for each degree program in which they taught.

CHAPTER 2: EARLY CHILDHOOD HIGHER EDUCATION PROGRAMS

Primary Goals of California Early Childhood Degree Program

The Inventory asked program deans/coordinators to select the primary goal of their degree programs. The options included:

- To prepare students for teaching and/or administrative roles only in early childhood education settings, such as preschools, child care centers, and family child care homes - for children birth to five.
- To prepare students for teaching and/or administrative roles in early childhood and elementary education settings.
- To prepare students for the roles of early interventionists or early childhood special educators.
- To prepare students for multiple roles involving young children, working in many types of settings.

See **Figure 2.1**.

Note: The program module for multiple subject credential programs was limited in scope and did not cover all of the areas included for degree programs. As a result, not all program-related findings include data from the multiple subject credential programs.

- About four in ten associate degree programs reported that their primary goal was “to prepare students to work in multiple roles involving young children, working in many types of settings,” or “to prepare students for teaching and/or administrative roles, only in early childhood education settings for children birth to five.”

⇒ Less than 11 percent of associate degree programs reported any other goals.

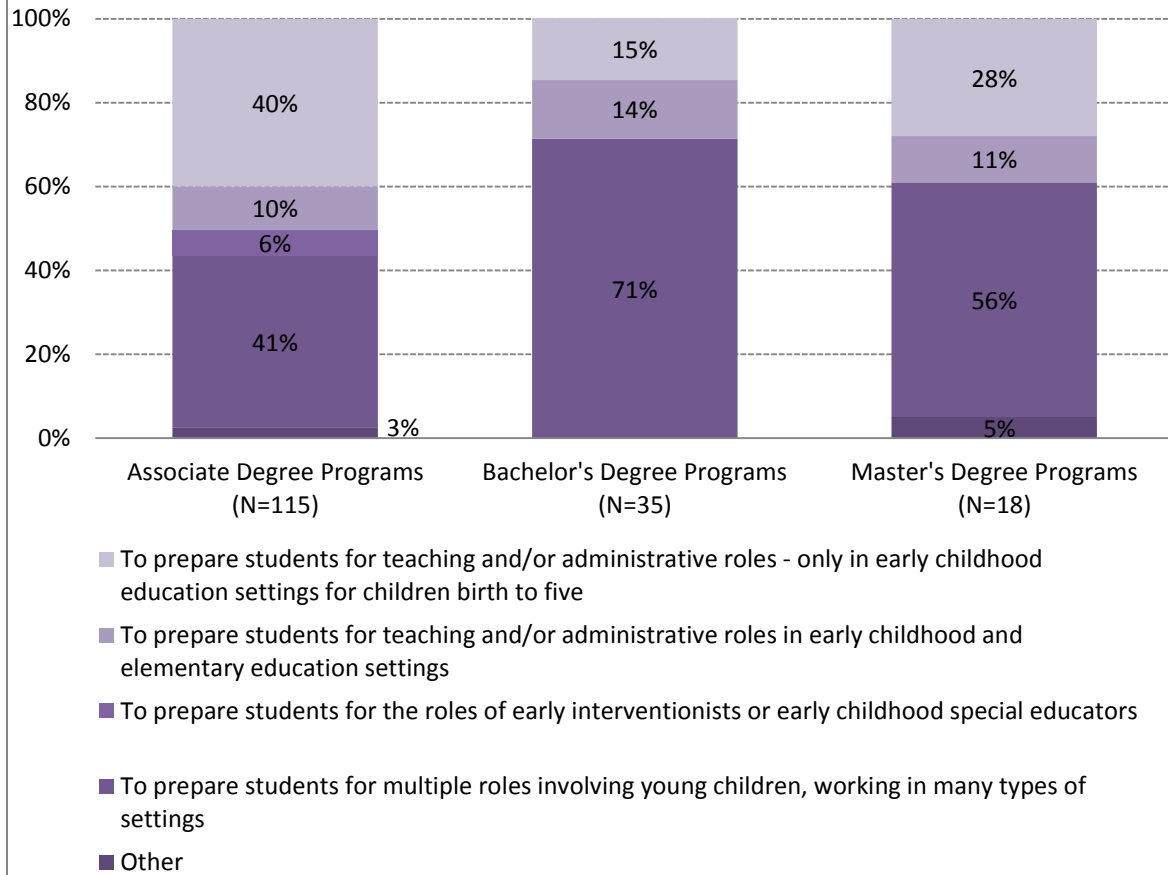
- Almost three-quarters of bachelor's degree programs reported that their primary goal was to "prepare students to work in multiple roles involving young children, working in many types of settings."

⇒ Fifteen percent or fewer of bachelor's degree programs reported any other goals.

- Slightly more than one-half of master's degree programs also reported that their primary goal was to "prepare students to work in multiple roles involving young children, working in many types of settings."

⇒ Approximately one-quarter of master's degree programs reported that their primary goal was to "prepare students for teaching and/or administrative roles, only in early childhood education settings for children birth to five."

Figure 2.1: Primary Goal of California's Early Childhood Higher Education Degree Programs, by Degree Program



Students Served in California Early Childhood Higher Education Programs

The Inventory asked program deans/coordinators a series of questions about the students in their programs.

Deans or coordinators were first asked to indicate their target student population. The options included:

- Adults already working in early childhood settings;
- Pre-service students;
- A mix of both groups.

They were then asked to estimate the number of students registered in the degree program and the number of degrees conferred during the 2012-2013 academic year.

Finally, they were asked to indicate which student services, if any, were offered to students in the degree program. These included three general categories of services:

- Counseling support, such as academic and financial aid counseling;
- Access support, such as classes in convenient locations and at convenient times (e.g., evenings, weekends);
- Skills support, such as academic tutoring and assistance with technology.

If the service was offered, respondents were asked to indicate whether the service was offered specifically to students in the degree program, and/or to the student body as a whole.

Targeted Student Population (See Figure 2.2)

- Associate and bachelor's degree programs were more likely than master's degree programs to report targeting both groups of students: pre-service students and those already working in the early childhood field.

⇒ Almost all (96 percent) associate degree programs reported targeting both groups of students.

⇒ Approximately two-thirds of bachelor's degree programs reported targeting both groups of students.

⇒ Less than one-half (44 percent) of master's degree programs reported targeting both groups of students.

- Master's degree programs were the most likely of the degree programs to report exclusively targeting students already working in early childhood settings. More than one-half (56 percent) did so, compared to less than 15 percent of bachelor's and associate degree programs.
- Although small percentages of degree programs at all levels reported exclusively targeting pre-service students, bachelor's degree programs were the most likely to do so. Approximately one-fifth of these exclusively targeted pre-service students, compared to less than five percent of associate and master's degree programs.

Number of Students and Degrees Conferred (See Figures 2.3 and 2.4)

- Degree programs reported a wide range in the numbers of students enrolled in their programs (from one to more than 200), and in the number of degrees conferred (from one to more than 200) in the 2012/2013 academic year.
- Bachelor's degree programs were the most likely to report enrolling 200 or more students. Approximately one-half of bachelor's degree programs did so, compared to approximately one-quarter of associate and six percent of master's degree programs.
- Similarly, bachelor's degree programs were the most likely to report conferring 50 or more degrees during the 2012/2013 academic year. Forty percent of bachelor's degree programs did so, compared to less than 15 percent of associate and master's degree programs.

Student Services (See Figures 2.5, 2.6, and 2.7)

- Degree programs reported that students were offered a variety of services to help them access their education and to succeed in their educational careers. These included three general categories of service: counseling support, such as academic and financial aid counseling; access support, such as classes in convenient locations and at convenient times (e.g., evenings, weekends); and skills support, such as academic tutoring and assistance with technology.
- There was some variation among degree programs in the specific student services offered.
 - ⇒ Associate degree programs (55 percent) were less likely to report offering cohort programs, in which small groups of students move through their degree programs together, than were bachelor's (71 percent) or master's (81 percent) degree programs.

- ⇒ Associate degree programs were the most likely to report offering classes off campus in community-based settings. Approximately two-thirds did so, compared to 45 percent of bachelor's and 38 percent of master's degree programs.
- ⇒ One-half of master's degree programs offered online courses, compared to almost all the associate (95 percent) and bachelor's (90 percent) degree programs.
- In general, degree programs reported that these student services were offered to all students in the college or university, and were not targeted specifically to students in the early childhood degree program.

Figure 2.2: Target Student Populations of California Early Childhood Higher Education Degree Programs, by Degree Program

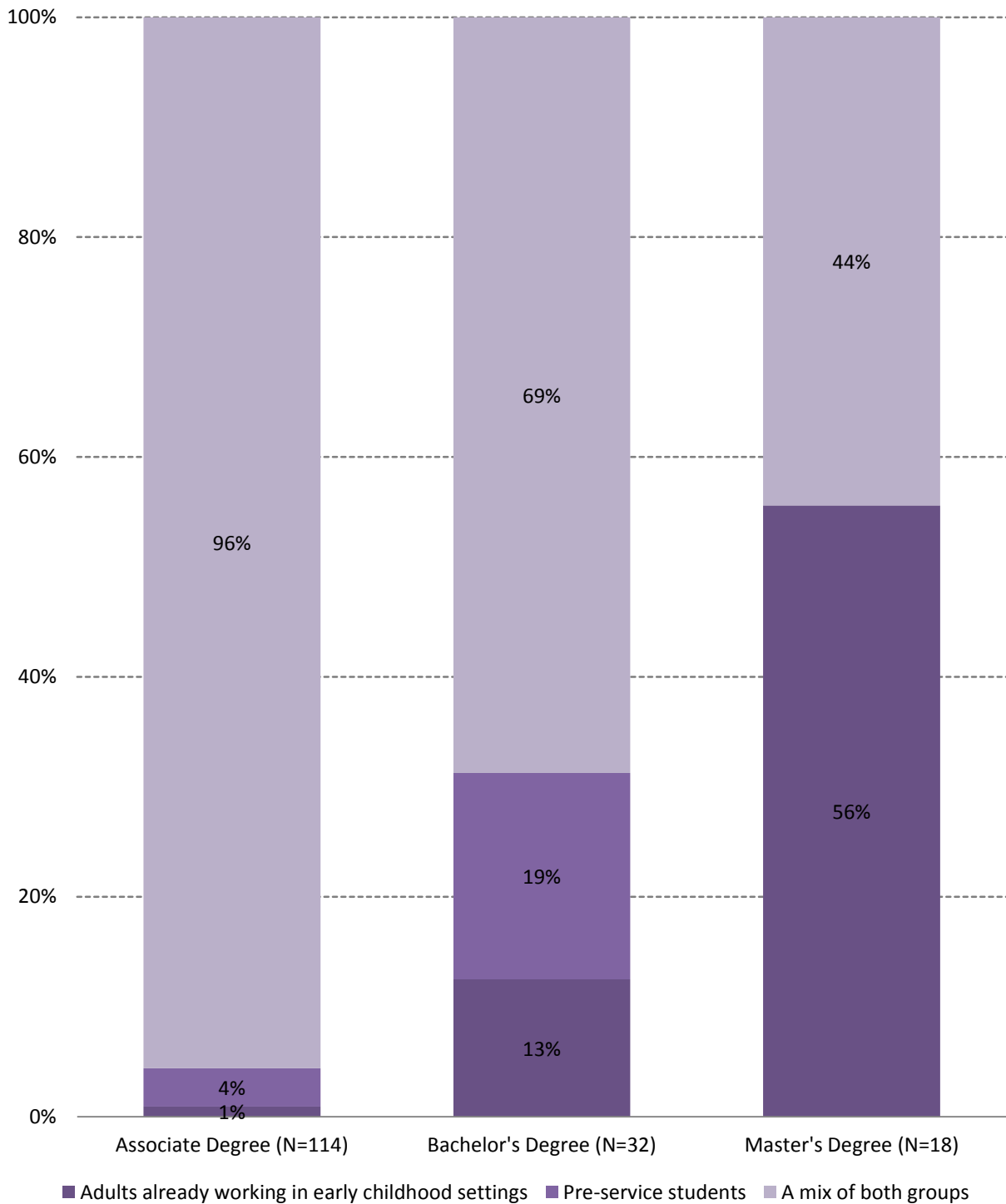


Figure 2.3: Number of Students Enrolled in California Early Childhood Higher Education Degree Programs in the 2012-2013 Academic Year, by Degree Program

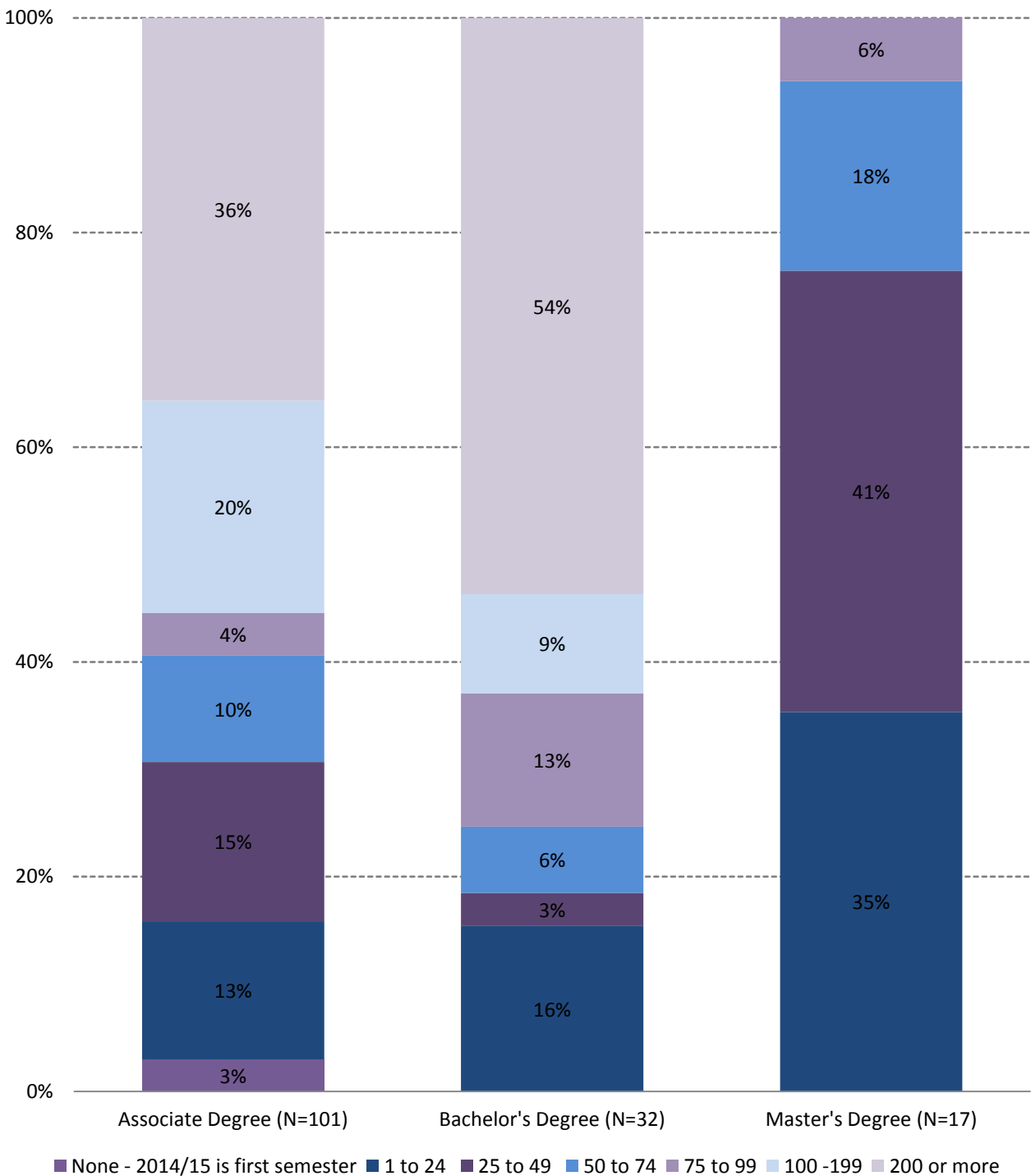


Figure 2.4: Number of Degrees Conferred in California Early Childhood Higher Education Degree Programs in the 2012-2013 Academic Year, by Degree Program

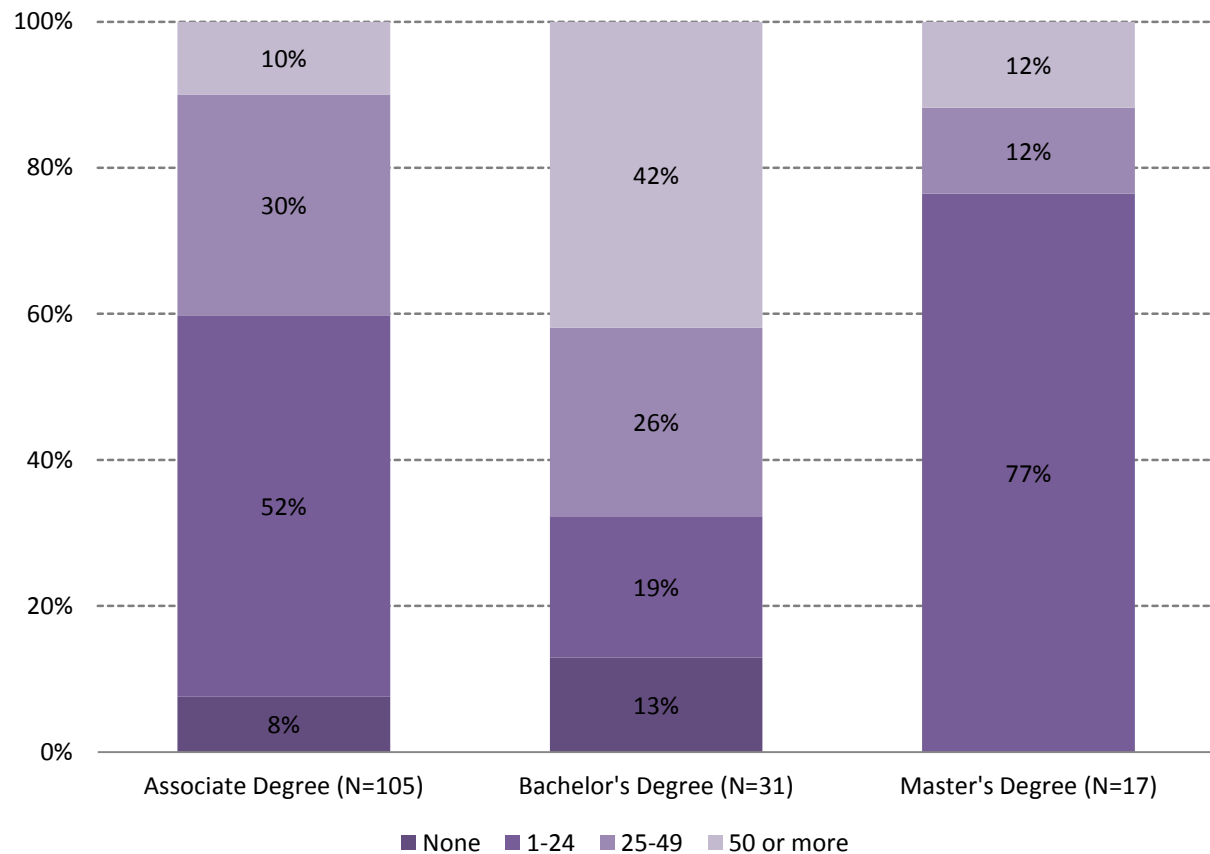


Figure 2.5: Services Offered to Students in California Early Childhood Higher Education Degree Programs: Counseling Support, by Degree Program

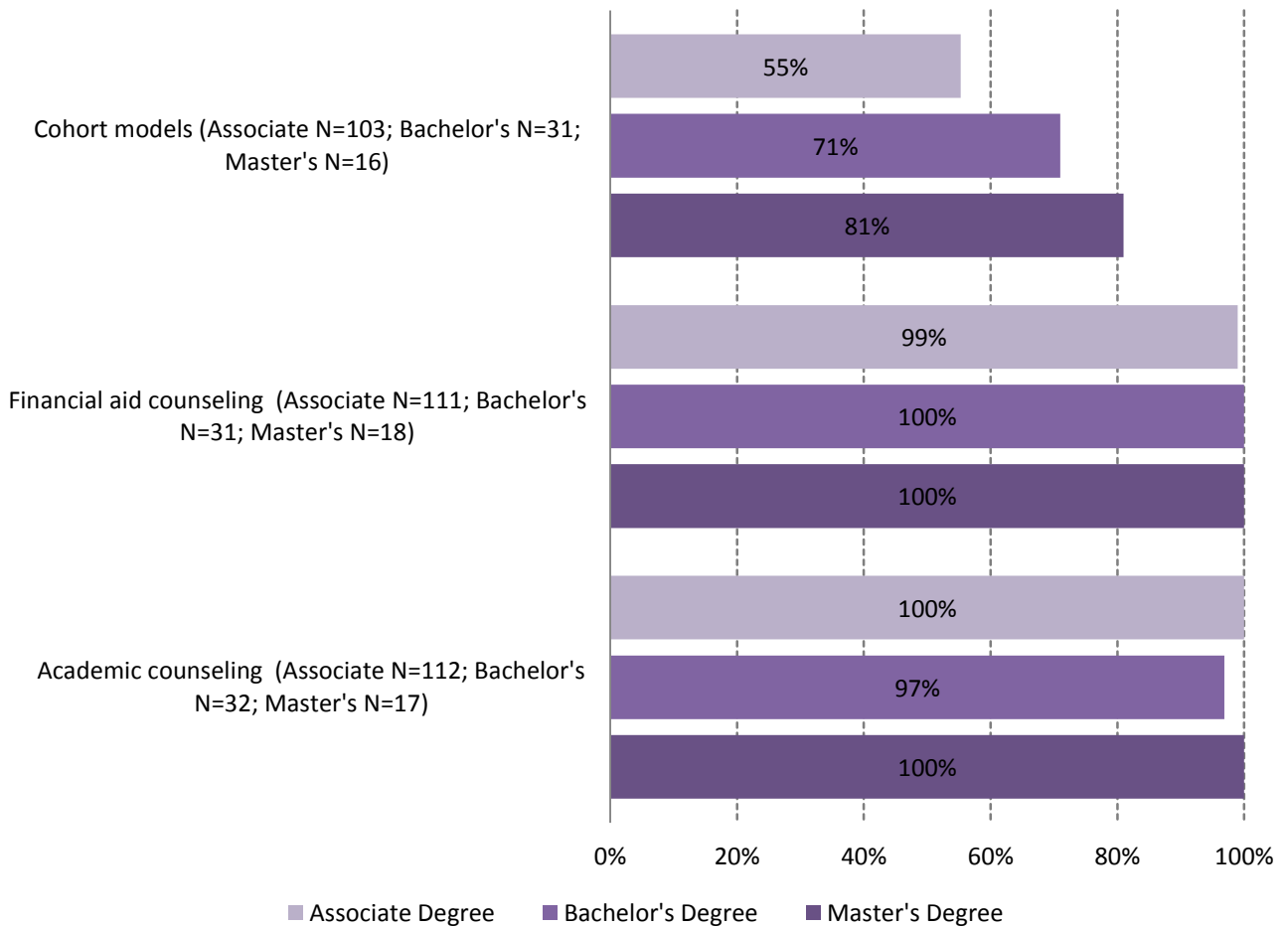


Figure 2.6: Services Offered to Students in California Early Childhood Higher Education Degree Programs: Access Support, by Degree Program

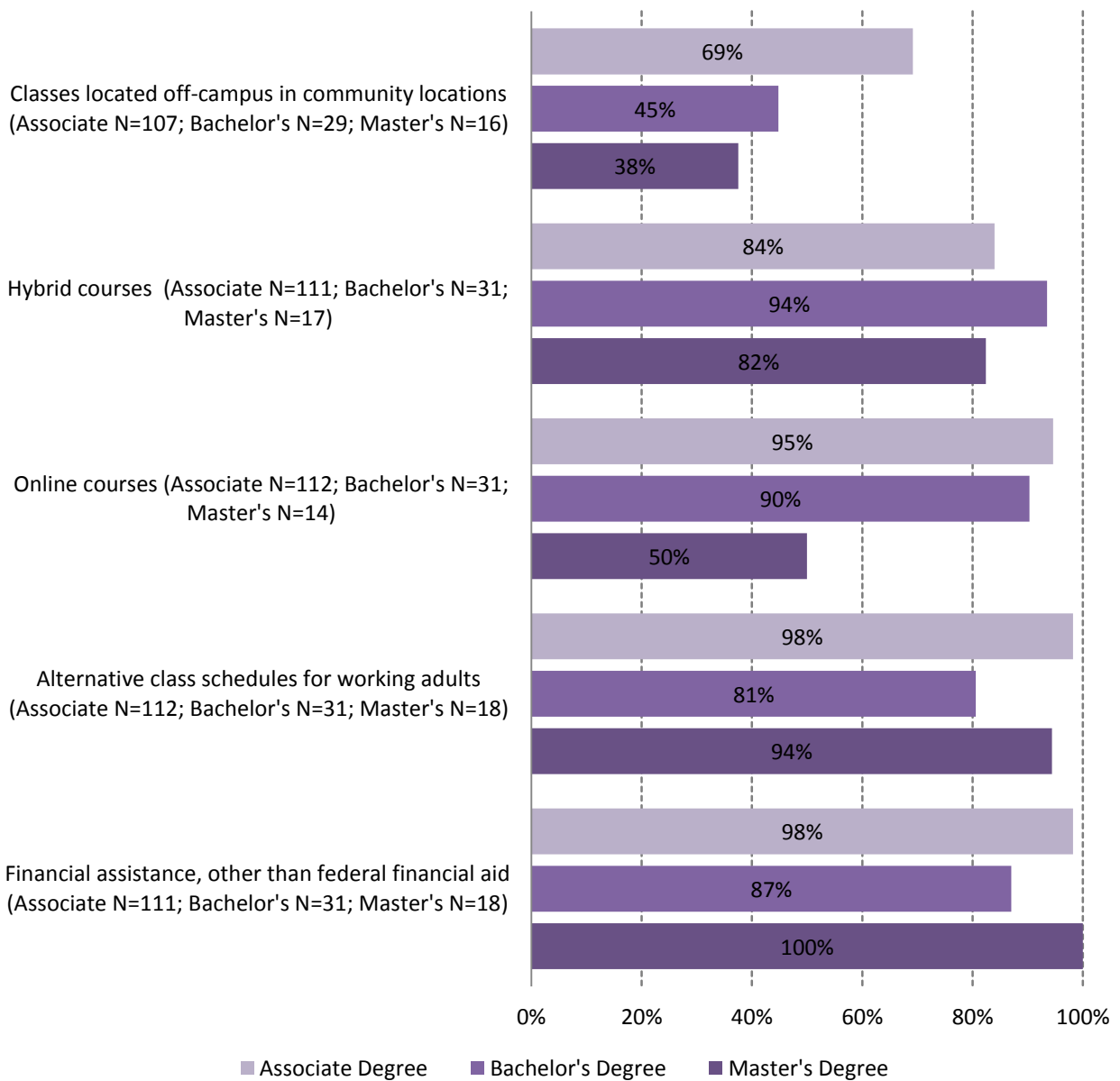
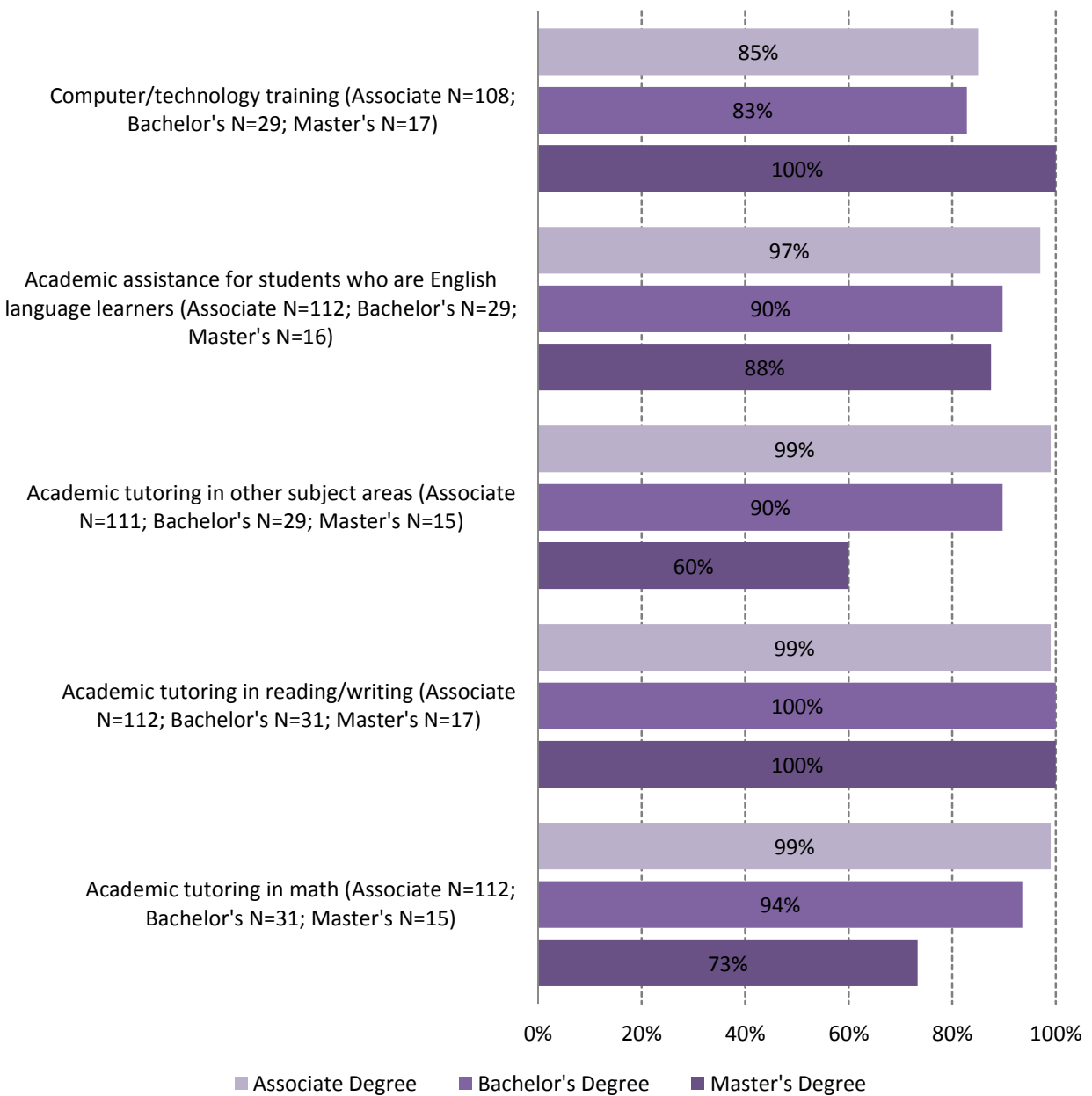


Figure 2.7: Student Services Offered in California Early Childhood Higher Education Degree Programs: Skills Support, by Degree Program



Content and Age-Group Focus of California Early Childhood Degree Programs

The Inventory asked deans/coordinators to identify the topics required for the degree. Topics were categorized into broad content areas:

1. Child Development and Learning
2. Teaching Diverse Child Populations
3. Teaching and Curriculum
4. Teaching Skills in Early Childhood Settings
5. Early Childhood Administration and Leadership (offered, not required)
6. Family Engagement¹
7. Early Mathematics¹
 - Teaching young children math skills
 - Development of young children’s mathematical understanding

Respondents were then asked to specify the age-group focus of the required topics. The four age groups were:

1. Infants and toddlers (birth to 2 years)
2. Preschool (3 and/or 4 years)
3. Transitional Kindergarten
4. Kindergarten through 3rd grade or higher

¹Findings related to family engagement and early mathematics are reported in Chapter 5.

- *Child Development and Learning:* Three-quarters or more of degree programs at all levels reported requiring each of the six “child development and learning” topics listed in the Inventory, with one exception. (See Figure 2.8 and Appendix Table A2-1.)

⇒ Approximately two-thirds of master’s degree programs reported requiring the topic “development of children’s scientific understanding.”

- *Teaching Diverse Child Populations:* Seventy percent or more of degree programs at all levels reported requiring each of the five “teaching diverse child populations” topics, with one exception. (See **Figure 2.9** and **Appendix Table A2-2.**)

⇒ Sixty-three percent of master’s degree program required “teaching children with special needs.”

- *Teaching and Curriculum*: Degree programs varied in their requirements related to the eight “teaching and curriculum” content areas. (See **Figure 2.10** and **Appendix Table A2-3**.)

⇒ More than 90 percent of associate degree programs reported requiring each of the eight “teaching and curriculum” topics.

⇒ Three-quarters or more of bachelor’s degree programs reported requiring six of the eight topics listed in the Inventory. The two topics required by less than three-quarters of bachelor’s degree programs were:

- Teaching children social studies (61 percent) and
- Teaching children art (67 percent).

⇒ Two-thirds or more of master’s degree programs reported requiring three of the eight topics. The five topics required by less than two-thirds of master’s degree programs were:

- Teaching children social studies (53 percent),
- Teaching children art (53 percent),
- Teaching children science skills (59 percent),
- Teaching children literacy skills (59 percent), and
- Supporting and extending children’s physical skills (59 percent).

- *Teaching Skills in Early Childhood Settings*: Three-quarters or more of degree programs at all levels reported requiring each of the three “teaching skills in early childhood settings” listed in the Inventory. (See **Figure 2.11** and **Appendix Table A2-4**.)

- *Early Childhood Administration and Leadership*: Overall, a smaller percentage of degree programs at all levels reported offering coursework related to “early childhood administration and leadership” than the content area described above. Associate degree programs were more likely to offer these courses than were other degree programs.

⇒ The only topics offered by three-quarters or more of all degree programs (see **Figure 2.12**) were:

- Assessment and documentation to inform program planning,
- Building relationships with other teachers and/or early childhood professionals,
- Guiding practitioners in implementing curriculum and appropriate teaching strategies, and
- Effective advocacy, and policy analysis and development.

Age-Group Focus (See Appendix Tables A2-1 through A2-4)

- While degree programs consistently reported focusing their coursework on preschool-age children, the focus on children in the younger and older age groups varied by topic and by degree program.
- Whereas bachelor's and master's degree programs reported focusing many topics on infants and toddlers, associate degree programs did so more consistently.
- Associate degree programs were the least likely to focus coursework on children in Transitional Kindergarten or in the early elementary grades.

The following figures display the percentages of degree programs requiring various topics for students to attain their degree. See **Appendix Tables A2-1** through **A2-4** for the age-group focus of each topic.

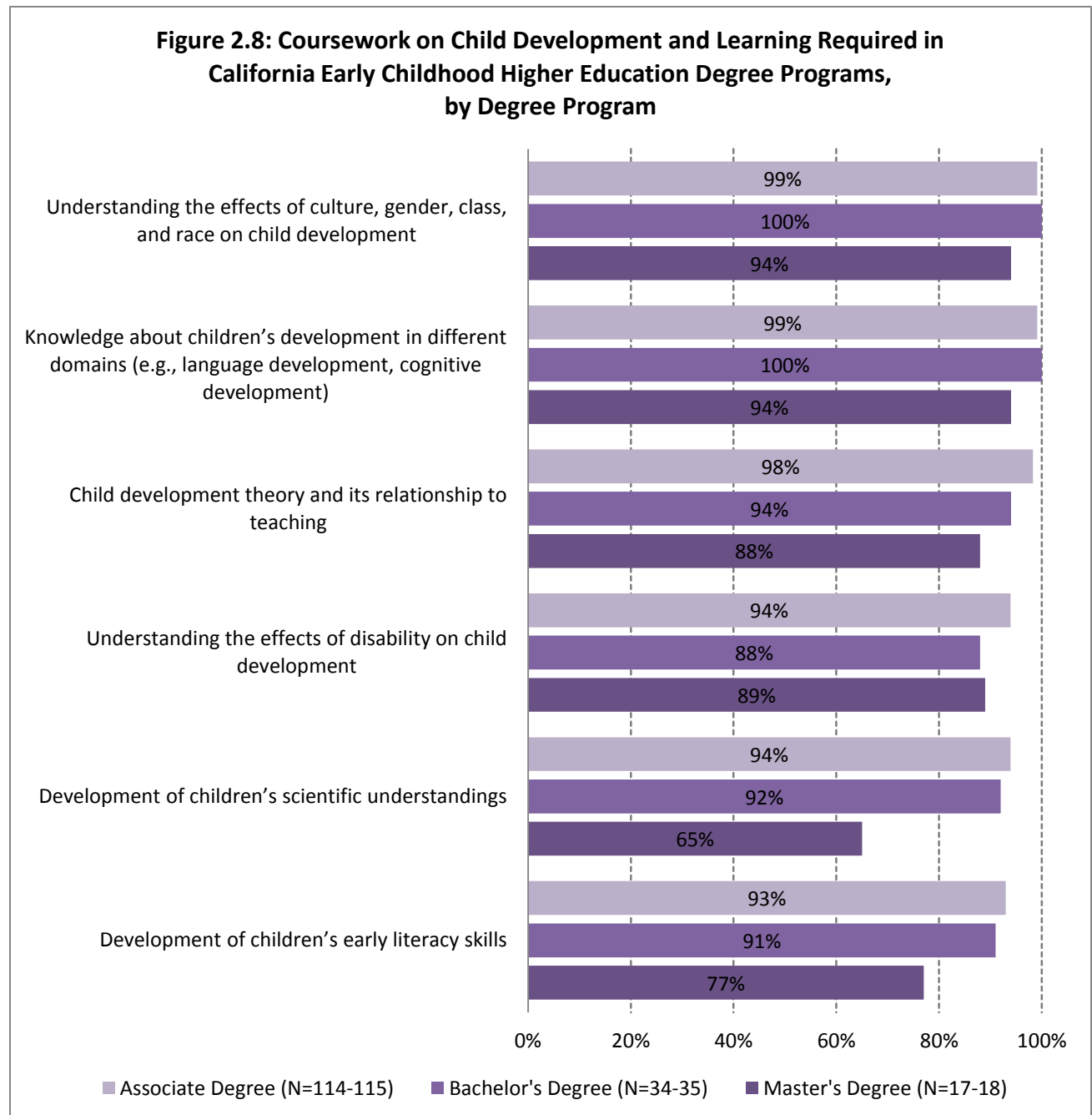


Figure 2.9: Coursework on Teaching Diverse Child Populations Required in California Early Childhood Higher Education Degree Programs, by Degree Program

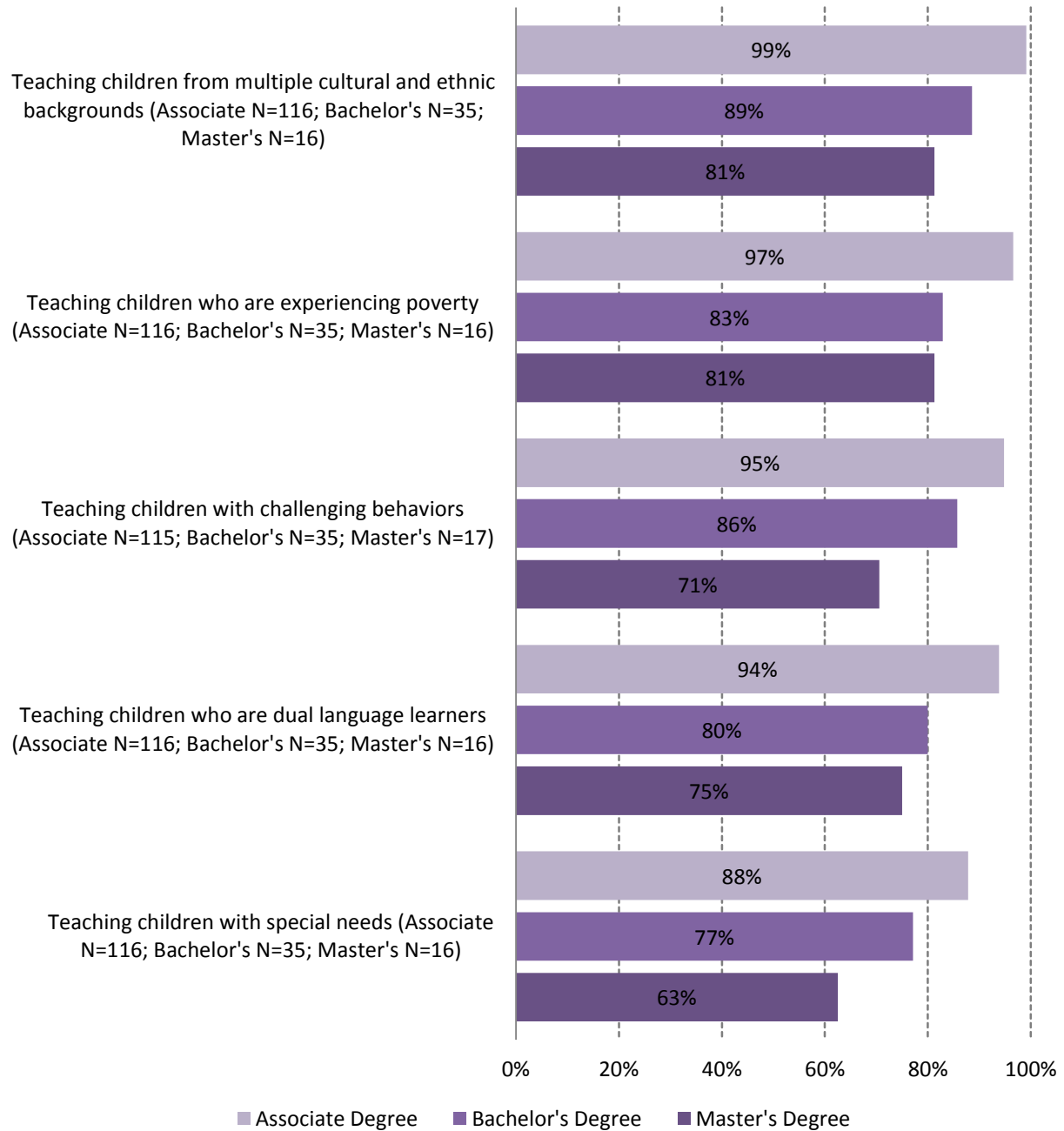


Figure 2.10: Coursework on Teaching and Curriculum Required in California Early Childhood Higher Education Degree Programs, by Degree Program

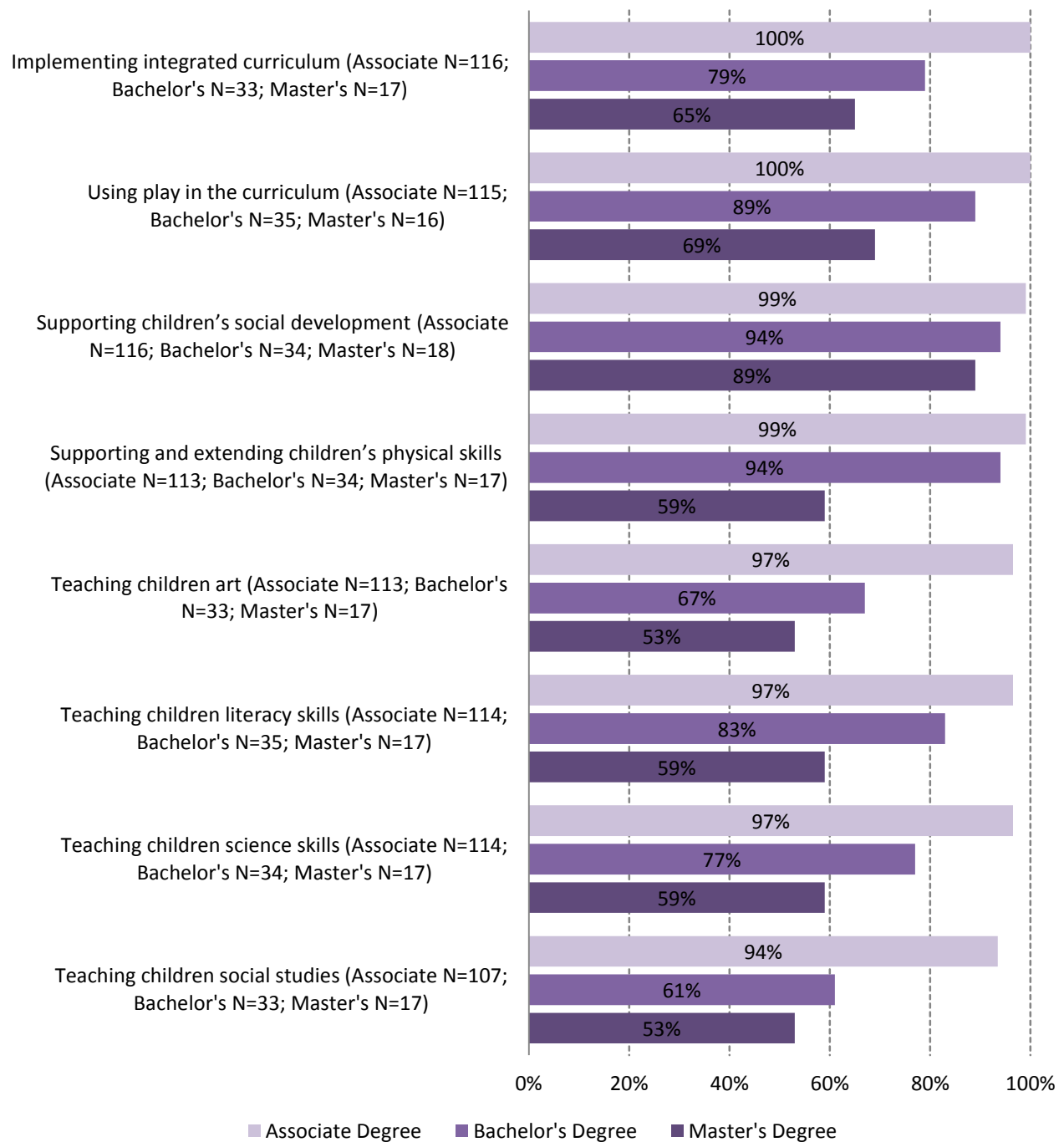


Figure 2.11: Coursework on Teaching Skills in Early Childhood Settings Required in California Early Childhood Higher Education Degree Programs, by Degree Level

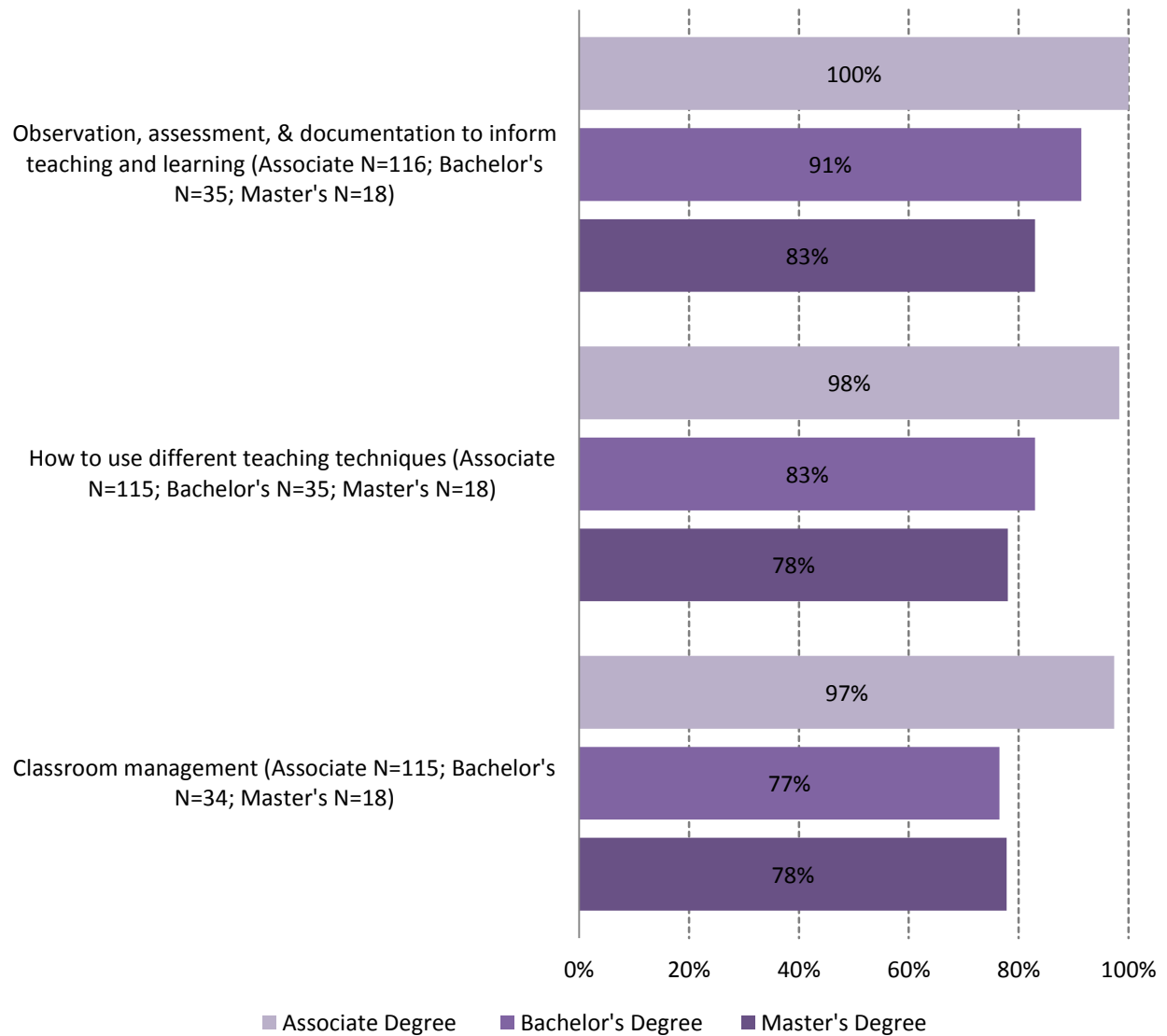


Figure 2.12: Coursework on Administration and Leadership Offered in California Early Childhood Higher Education Degree Programs, by Degree Program

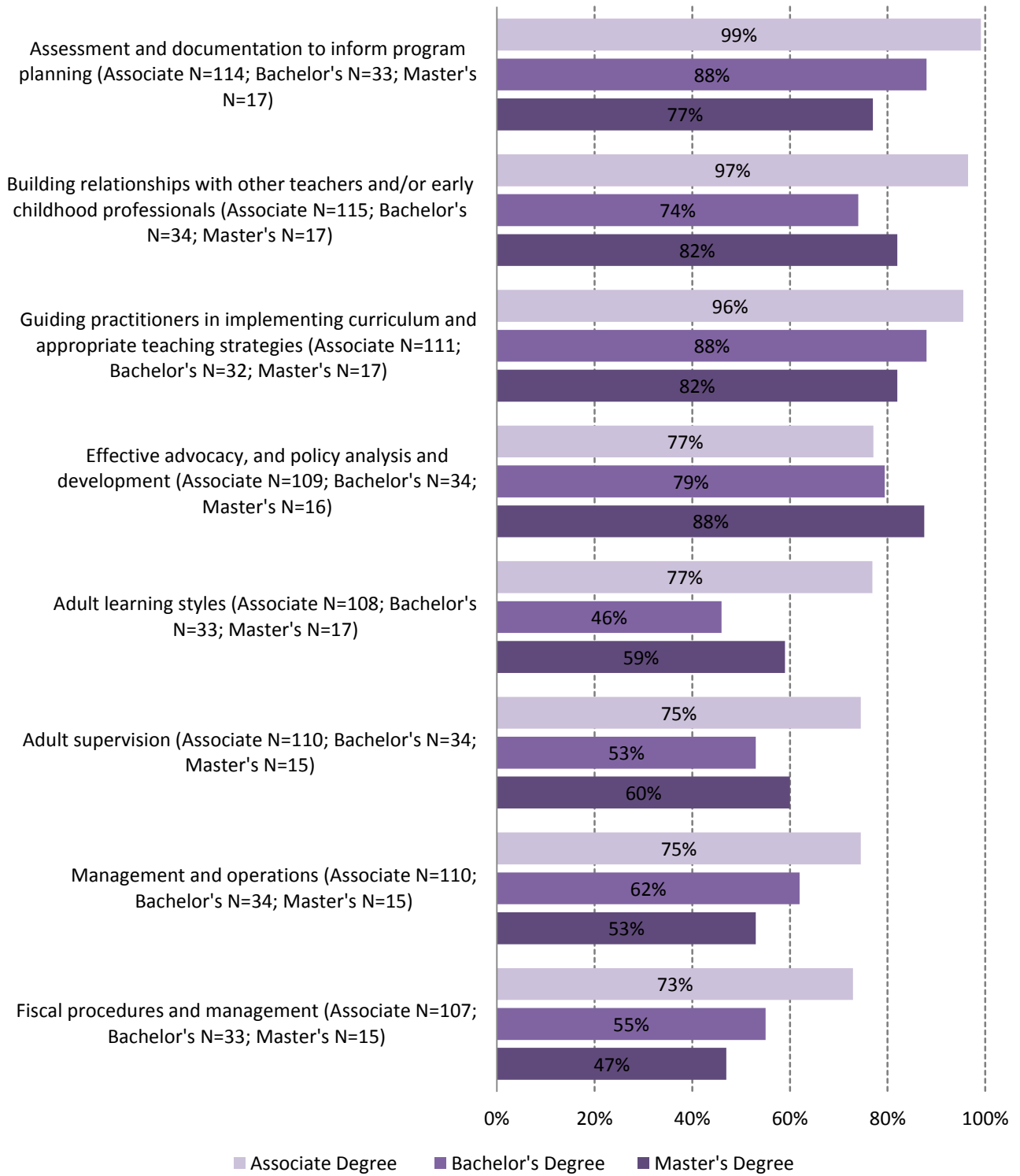
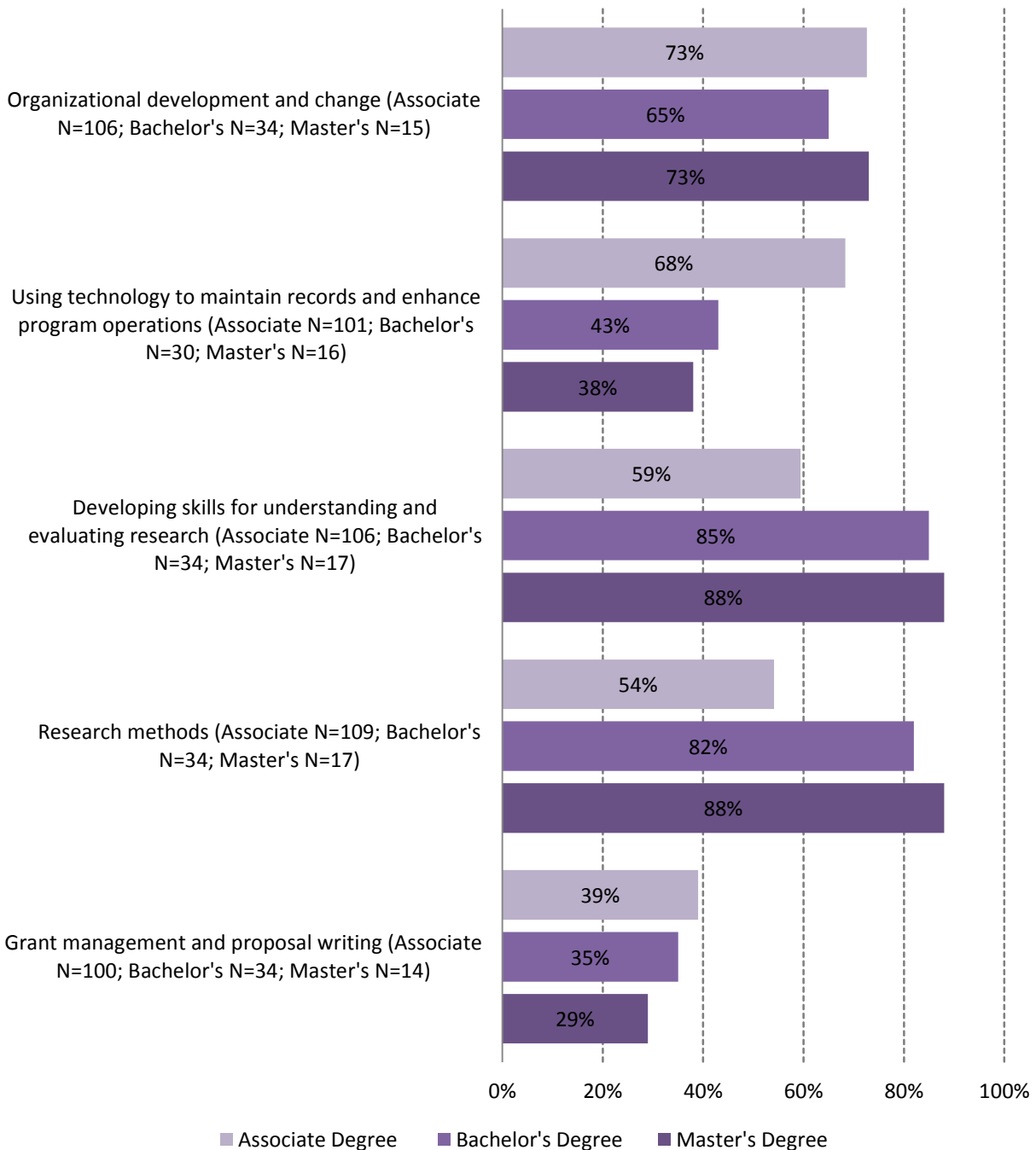


Figure 2.12: Coursework on Administration and Leadership Offered in California Early Childhood Higher Education Degree Programs, by Degree Program (continued)



Student Field Experiences

The Inventory asked respondents about two types of field experiences offered to the students:

1. Student teaching: defined as full-time immersion in a classroom, with increasing responsibility for curriculum planning and teaching, and supervision by a cooperating teacher.
2. Practicum: defined as an experience that is short in duration, associated with a course, often focused on a particular skill or population of children, and supervised by a faculty member and/or mentor.

If the field experience was required for attaining the degree, the Inventory asked about:

1. Timing and duration of the field experience;
2. Age-group focus of the field experience;
3. Faculty status of the faculty supervisor;
4. Criteria for selecting field sites;
5. Criteria for selecting cooperating teachers at the field sites (teachers at the sites who provide supervision and guidance for the students);
6. Resources provided to cooperating teachers; and
7. Differences in field experience structures for pre-service and experienced teachers.

- Overall, degree programs were more likely to require practicum experiences than student teaching. In addition, associate and bachelor's degree programs were more likely to require any field experiences than were master's degree programs. (See **Figure 2.13.**)

⇒ While almost all associate (91 percent) and bachelor's (87 percent) degree programs reported requiring students to participate in a practicum experience, one-half of master's degree programs reported doing so.

⇒ Less than 40 percent of any of the degree programs (39 percent associate, 32 percent bachelor's, and 18 percent master's) reported requiring students to participate in a student teaching experience.

For degree programs that required the field experience:

- Bachelor degree programs were more likely to require a specific age group for student teaching than were associate degree programs. When age groups were required, degree programs were more likely to require a focus on preschoolers than on children in other age

groups. (See **Figure 2.14.**) (The sample size for the master's degree programs was too small to report the findings.)

- ⇒ More than one-half (60 percent) of bachelor's degree programs required student teaching focused on preschool-age children; one-half on infants and toddlers; and 40 percent on children in kindergarten through third grade or higher.
- ⇒ Approximately one-half of associate degree programs required a student teaching focus on preschool-age children; one-fifth on infants and toddlers, and five percent on children in kindergarten through third grade or higher.

- Degree programs were also more likely to report requiring practicum experiences to focus on preschoolers than on children in the other age groups. (See **Figure 2.15.**)

- ⇒ One-half of associate degree, 37 percent of bachelor's degree, and 44 percent of master's degree programs reported requiring practicum experiences focused on the preschool years.
- ⇒ Less than one-quarter of degree programs at all levels (16 percent associate, 22 percent bachelor's, and 11 percent master's) required a focus on infants and toddlers.

- While one-third of master's degree programs required a focus on children in the early elementary years, only nine percent of associate and 15 percent of bachelor's degree programs did so.

- Almost all degree programs at all levels reported having criteria for selecting student teaching field sites. Three-quarters or more of degree programs at all levels requiring practicum experiences reported having criteria for selecting practicum sites.

- ⇒ All associate and master's degree programs, and 90 percent of bachelor's degree programs, reported having criteria for selecting student teaching field sites.
- ⇒ Almost all associate degree programs (99 percent), and approximately three-quarters of bachelor's and master's degree programs, reported having criteria for practicum sites.

- Degree programs varied widely in the criteria used to select field sites for both student teaching and practicum experiences. (See **Figures 2.16 through 2.19.**)

- ⇒ The three most frequently reported criteria for both student teaching and practicum sites reported by associate degree programs were:
 - Site is a college laboratory school,

- Teacher qualifications/characteristics (asked about in more detail in another question), and
- Observed quality rating of the site.

⇒ The four most frequently reported criteria for student teaching and practicum sites reported by bachelor's degree programs were:

- Teacher qualification/characteristics (asked about in more detail in another question) (student teaching),
- Site is a public school (practicum),
- Age of children served at the site (student teaching and practicum), and
- Site is a nationally accredited program (student teaching and practicum).

⇒ The three most frequently reported criteria for practicum sites reported by master's degree programs (sample size too small to report data for student teaching) were:

- Age of children served at the site,
- Site is a public school, and
- Children with disabilities served at the site.

■ Almost all associate (93 percent) and bachelor's (90 percent) degree programs reported using cooperating teachers to supervise student teaching. Almost all associate degree programs (97 percent), 85 percent of bachelor's degree programs, and 78 percent of master's degree programs used cooperating teachers to supervise practicum experiences.

■ The most frequently reported criterion reported by degree programs at all levels for both student teaching and practicum experiences was "cooperating teacher is a certified/certificated mentor or master teacher." (See **Figures 2.20** and **2.21.**)

■ Student teaching experiences primarily occurred at the end of the course of study in all degree programs.

■ The vast majority of associate degree programs (86 percent) reported that student teaching experiences occurred at the end of the course of study. Thirty percent reported that it occurred during the middle of the course of study, and 14 percent within the first year of study.

■ Similarly, almost all (90 percent) bachelor's degree programs reported that student teaching occurred at the end of the course of study. Ten percent reported that it occurred during the middle of the course of study, and 20 percent within the first year of study.

- The first practicum experience occurred at different times for students at different degree levels.
 - ⇒ Approximately one-half of associate degree programs reported that the first practicum occurred at the end of the course of study. Approximately one-quarter reported that it occurred during the middle of the course of study, and 18 percent within the first year of study.
 - ⇒ Approximately one-half of bachelor's degree programs reported that the first practicum occurred during the middle of the course of study. Approximately one-quarter reported that it occurred within the first year of study, and one-quarter at the end of the course of study.
 - ⇒ Forty-three percent of master's degree programs reported that the first practicum occurred during the beginning and/or the middle of the course of study. Fourteen percent reported that it occurred at the end of the course of study.
- Approximately one-third of degree programs at all levels reported structuring practicum experiences differently for novice and experienced teachers. Approximately one-quarter of associate degree programs, and 38 percent of bachelor's degree programs, did so for student teaching experiences. (Because of the small sample size, the findings from the master's degree programs are not reported here.)

Figure 2.13: Field Experiences Required in California Early Childhood Higher Education Degree Programs, by Degree Program

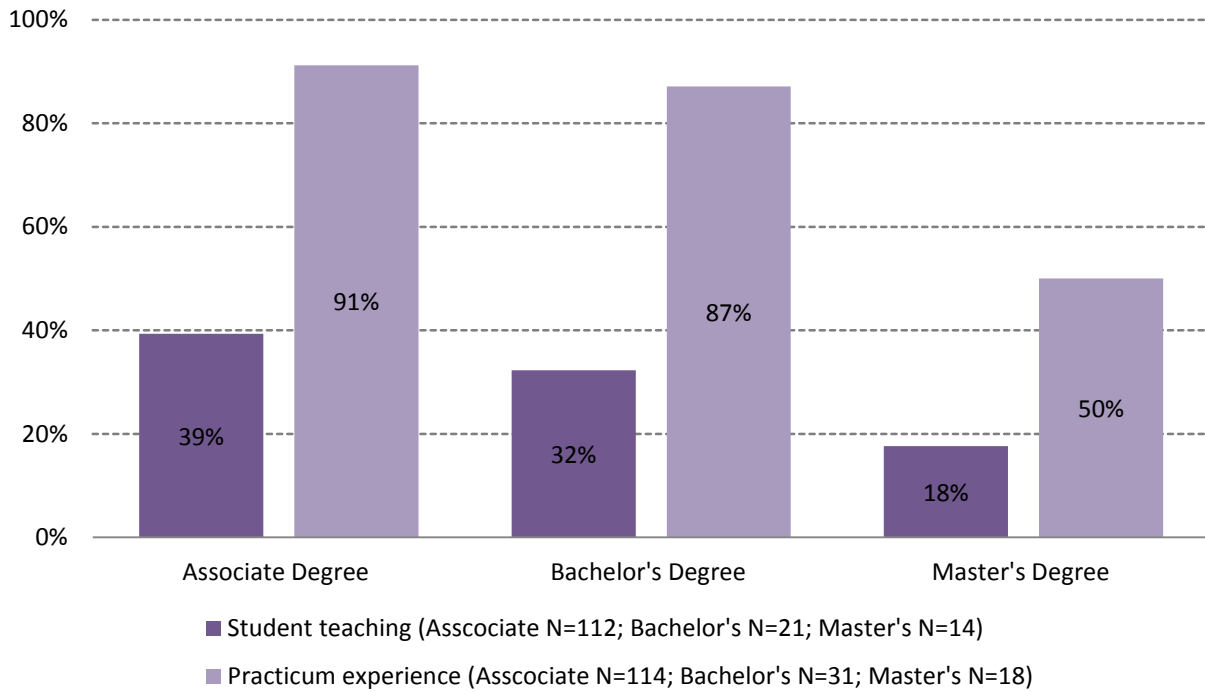


Figure 2.14: Age-Group Focus of Student Teaching in California Early Childhood Higher Education Degree Programs, by Degree Program

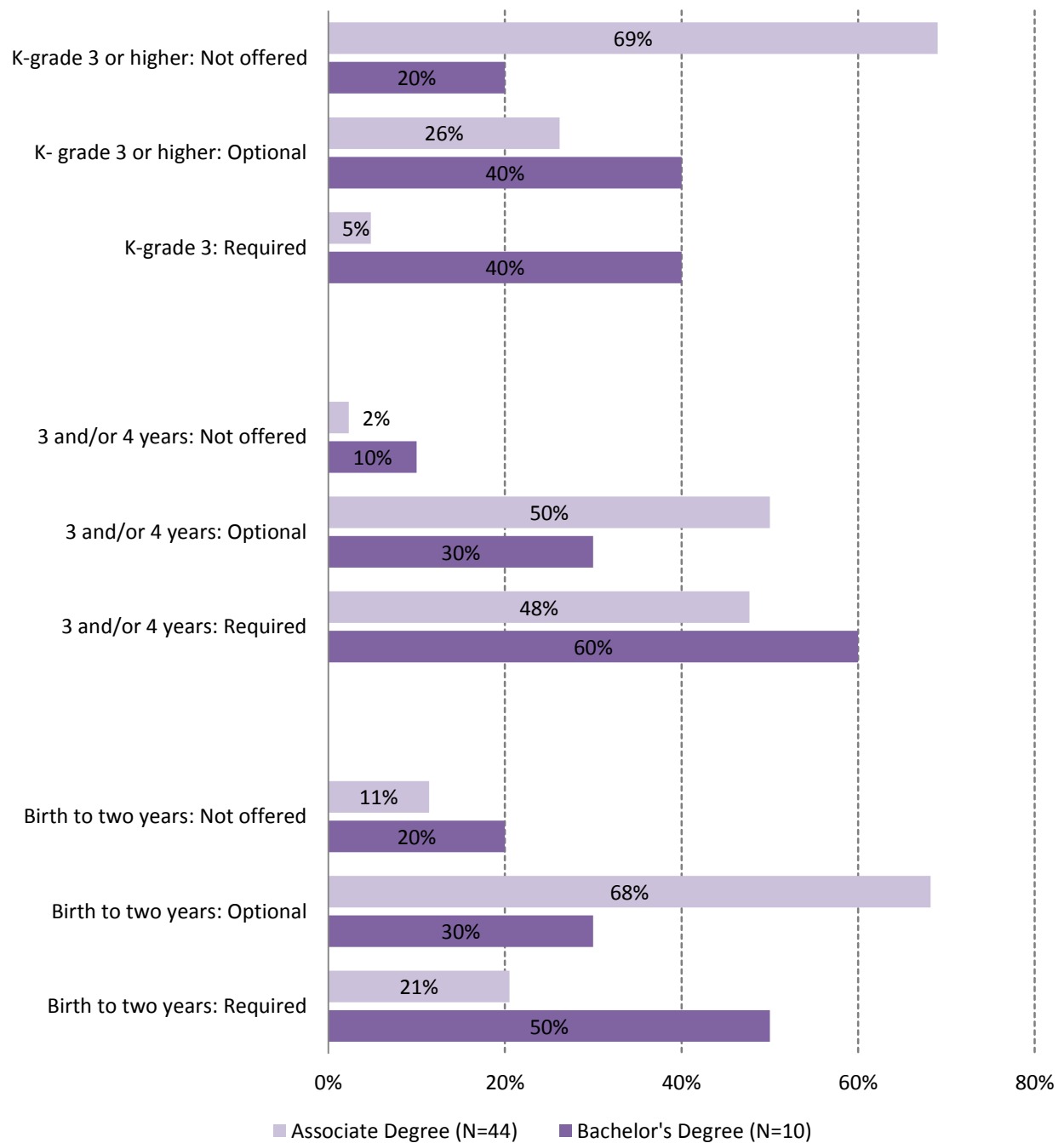
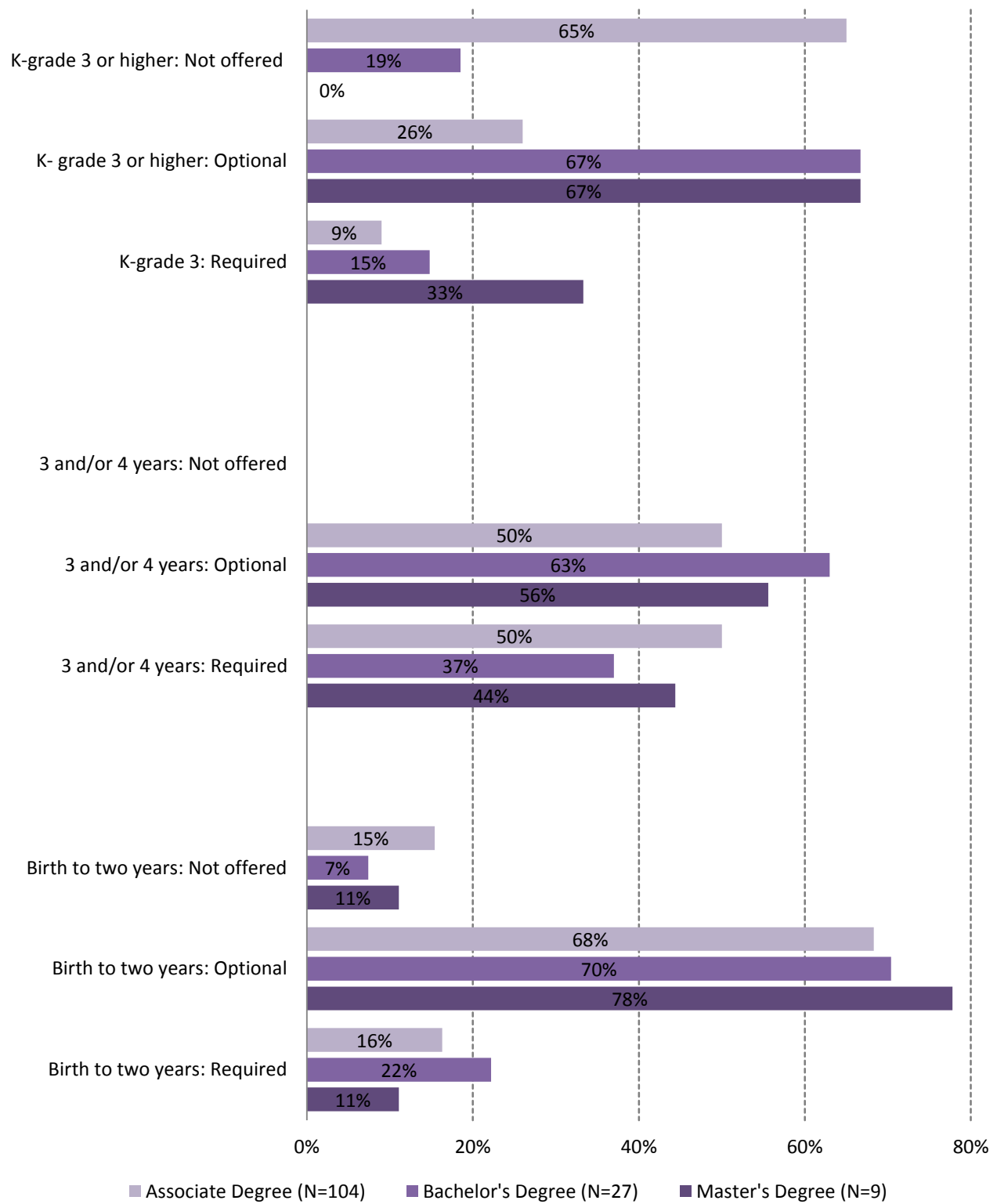
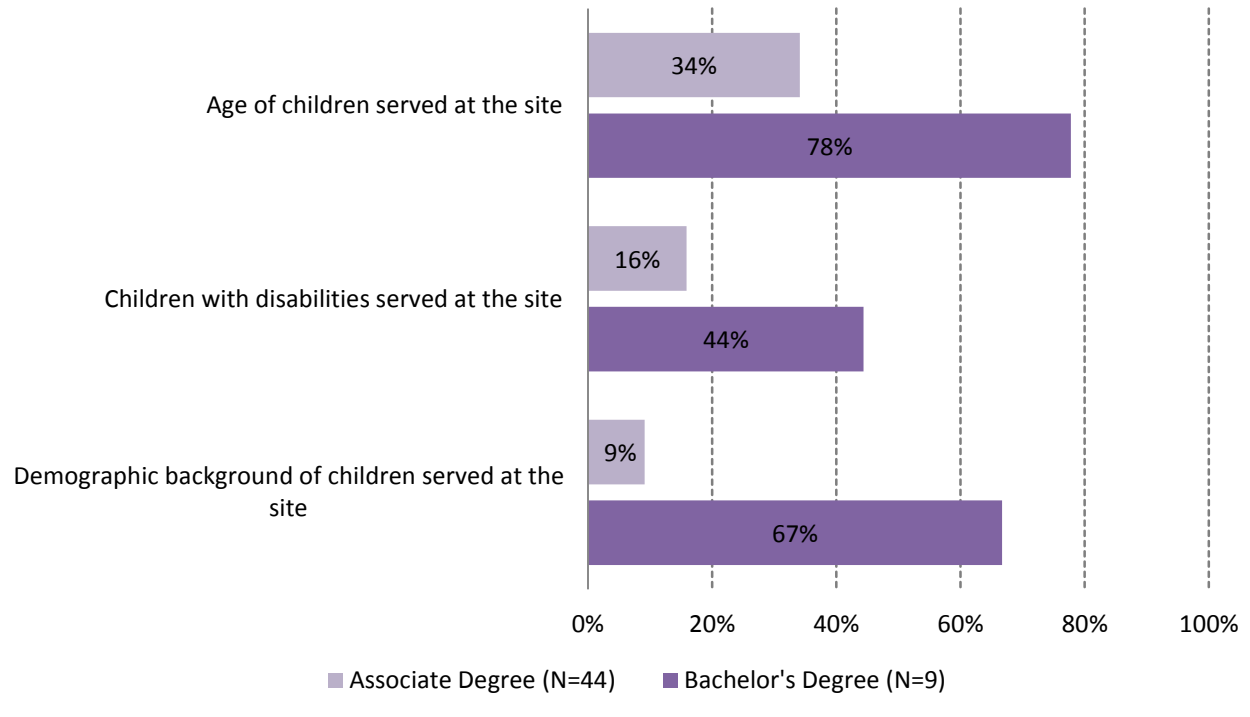


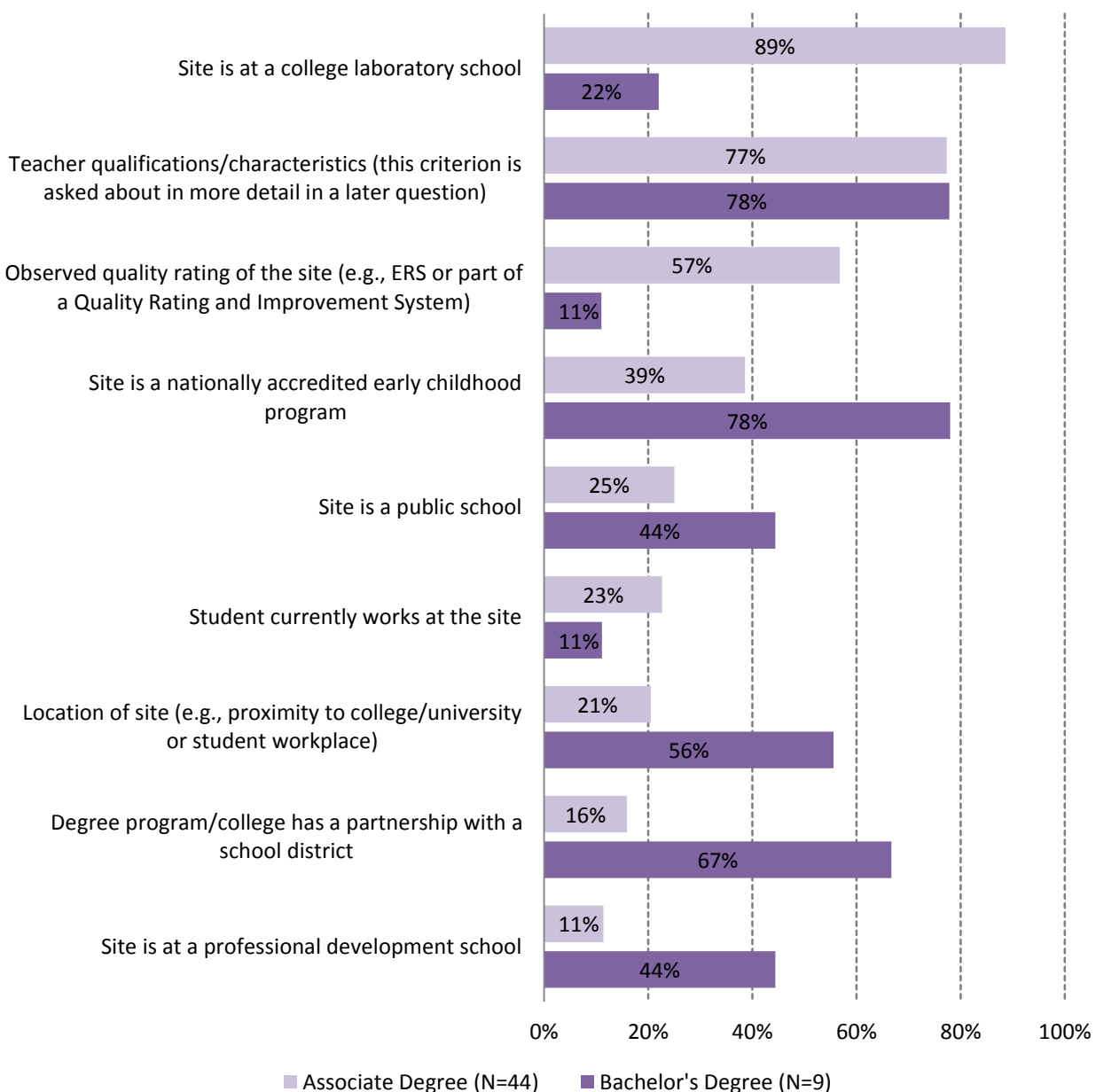
Figure 2.15: Age-Group Focus of Practicum Experiences in California Early Childhood Higher Education Degree Programs, by Degree Program



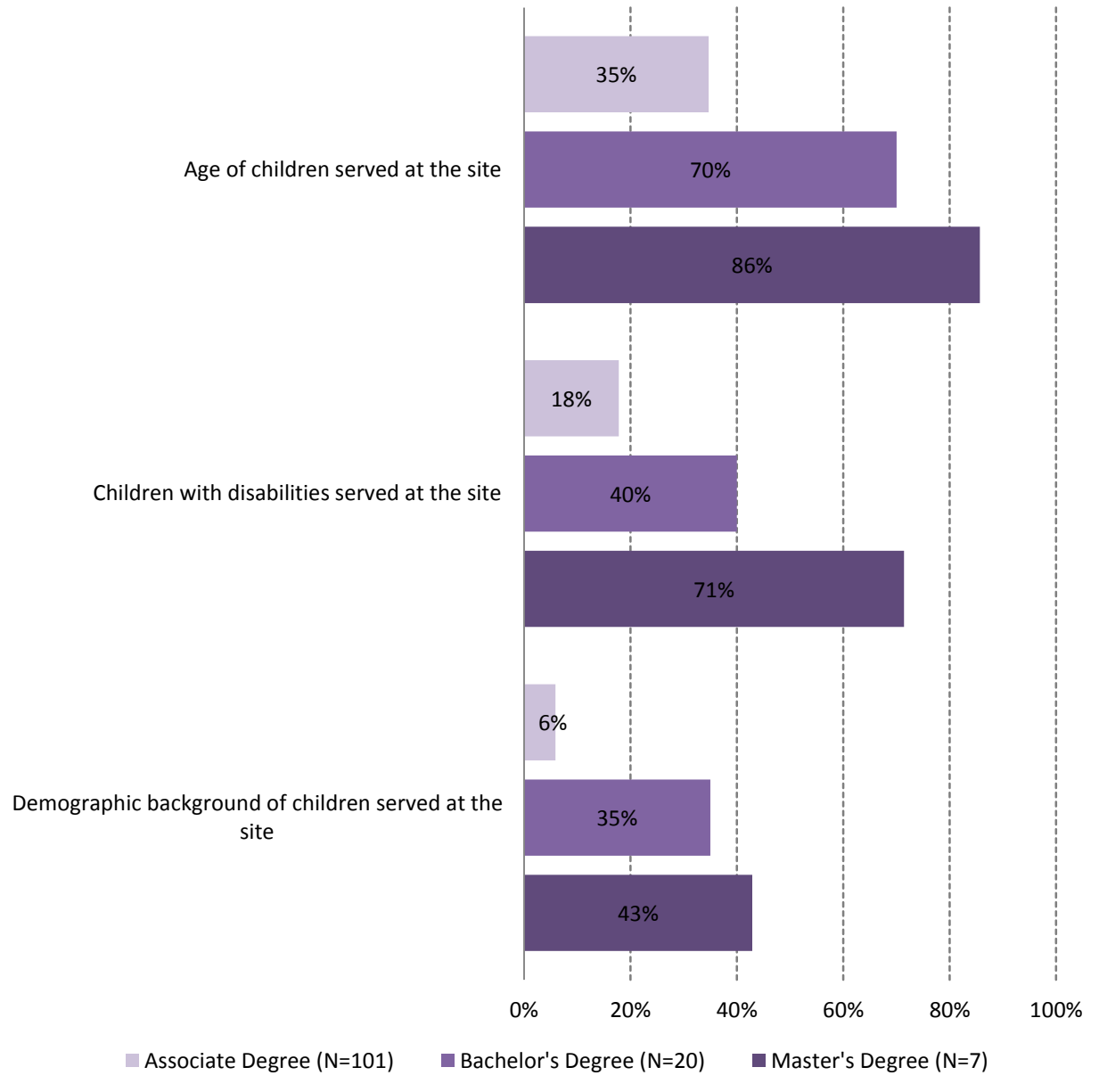
**Figure 2.16: Criteria for Selecting Student Teaching Sites in California Early Childhood Higher Education Degree Programs:
Child Characteristics, by Degree Level**



**Figure 2.17: Criteria for Selecting Student Teaching Sites in California Early Childhood Higher Education Degree Programs:
Site Characteristics, by Degree Level**



**Figure 2.18: Criteria for Selecting Practicum Sites in California Early Childhood Higher Education Degree Programs:
Child Characteristics, by Degree Level**



**Figure 2.19: Criteria for Selecting Practicum Sites in California Early Childhood Higher Education Degree Programs:
Site Characteristics, by Degree Level**

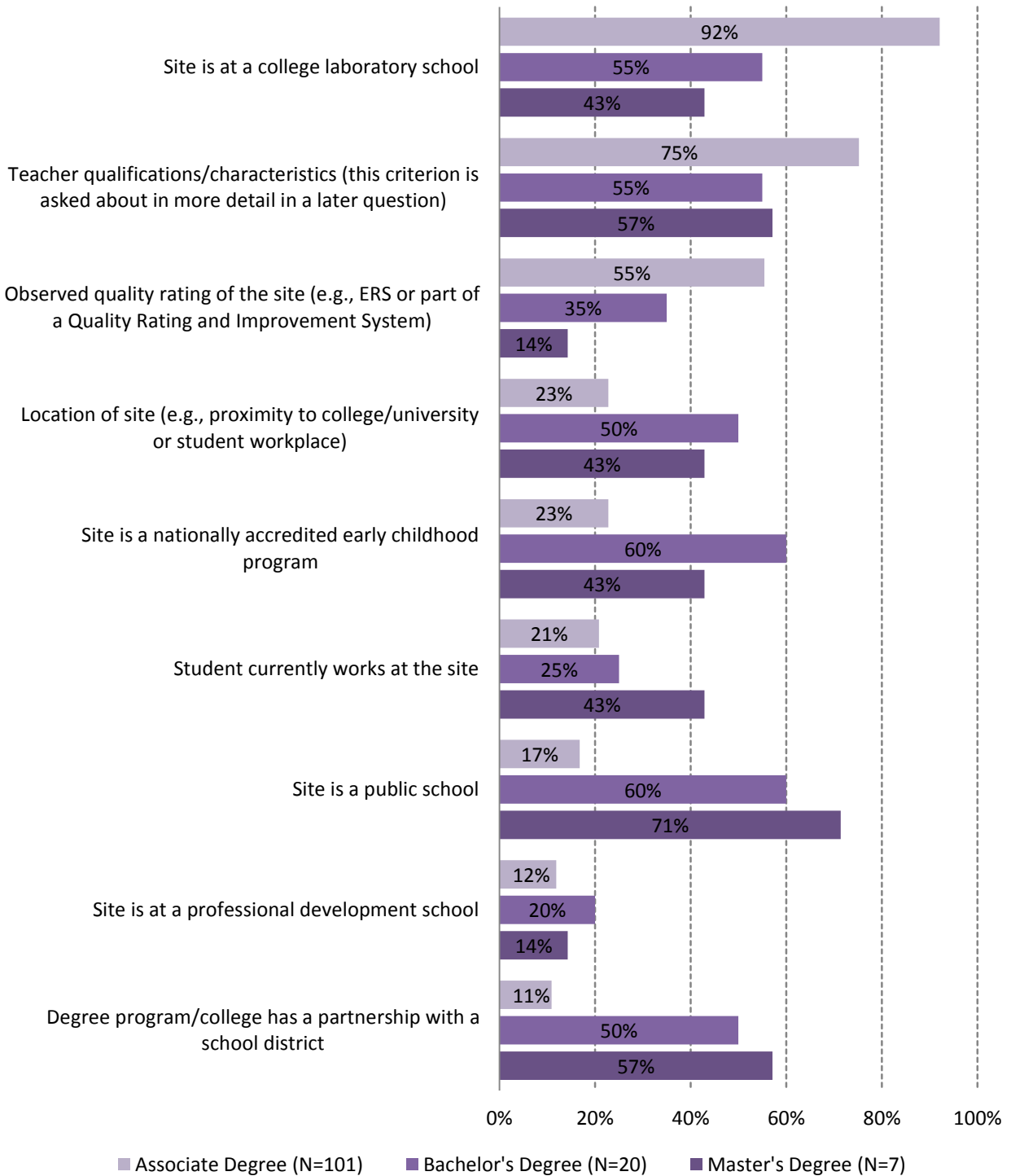


Figure 2.20: Criteria for Selecting Cooperating Teachers for Student Teaching Sites in California Early Childhood Higher Education Degree Programs, by Degree Level

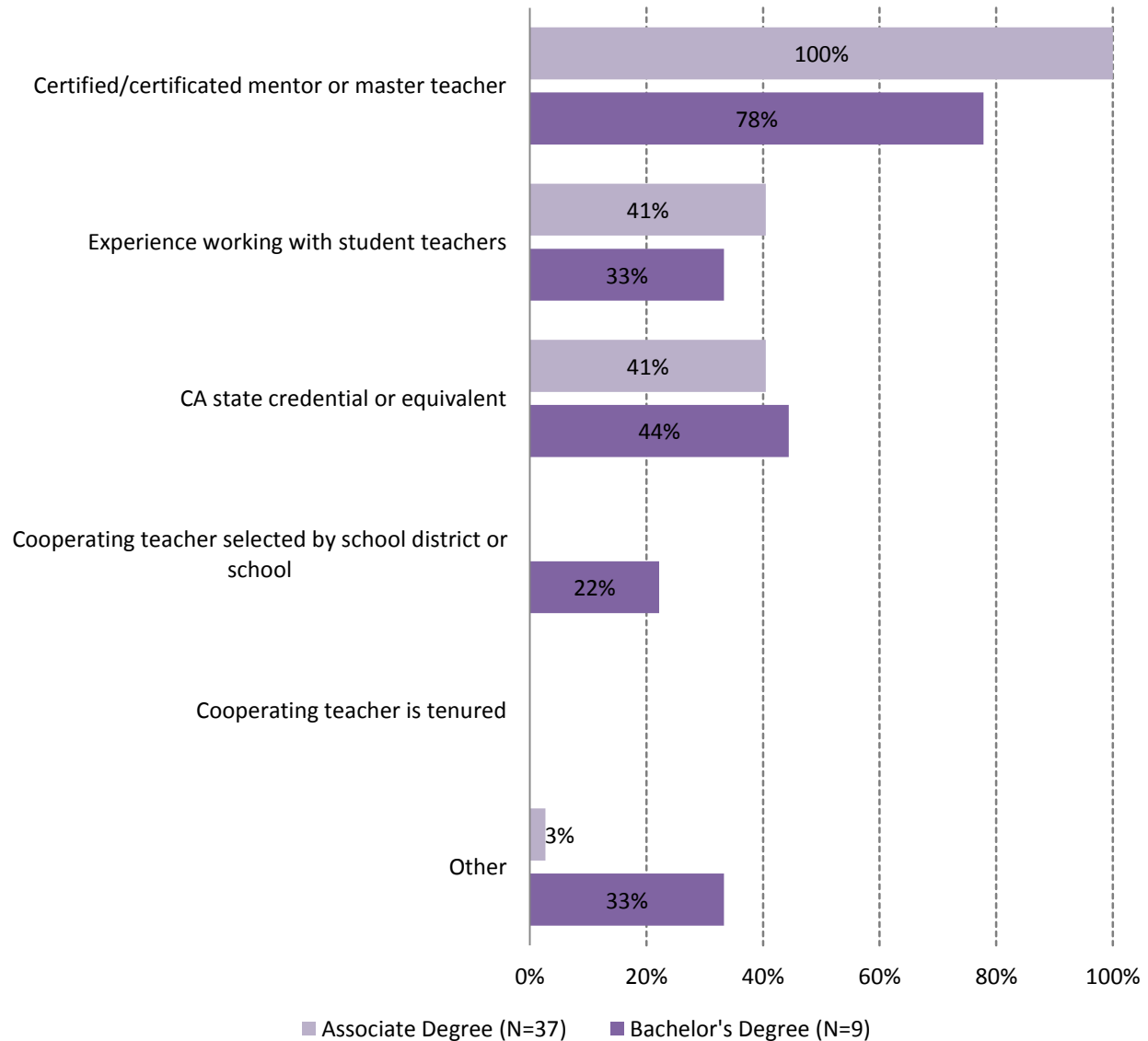
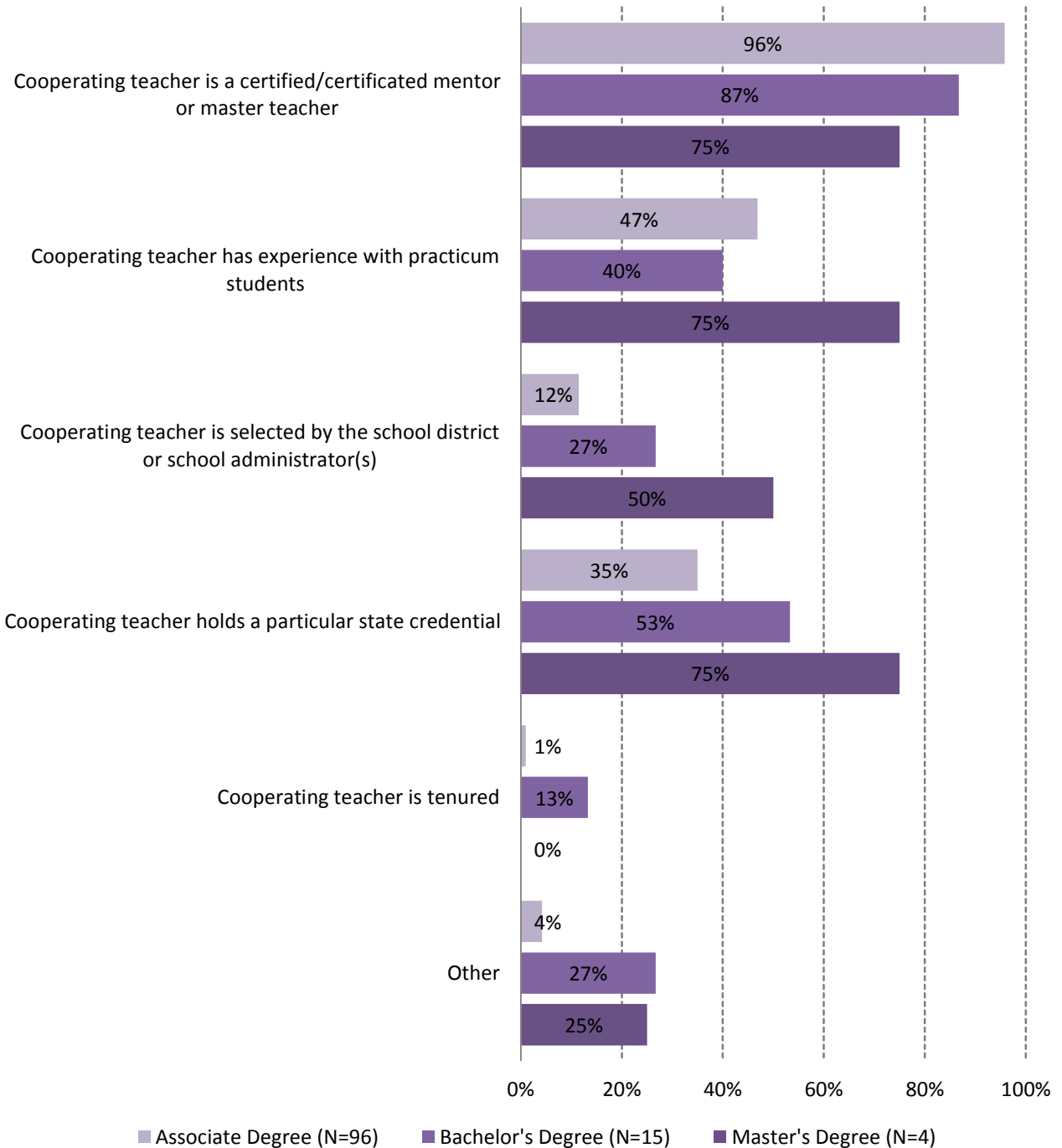


Figure 2.21: Criteria for Selecting Cooperating Teachers for Practicum Sites in California Early Childhood Higher Education Degree Programs, by Degree Program



Articulation and Alignment with the California Professional Development System

The Inventory asked deans/coordinators whether they had articulation agreements with other degree programs.

Respondents were then asked a series of questions about the alignment of coursework with the state's professional development system:

1. Whether the degree program offers coursework required for the California Education Specialist Instruction Credential, Early Childhood Special Education Authorization.
2. Whether the degree program offers coursework for the Child Development Permit. (California offers six levels of Child Development Permits, each with its own set of issuance requirements, and each authorizing the holder to perform different levels of service in child development programs.)
3. Whether the degree program offers certificates to students who are working towards a degree, and whether these certificates align with the Child Development Permit.

- Approximately three-quarters of associate degree programs reported articulation agreements with early childhood bachelor's degree programs. Accordingly, three-quarters of bachelor's degree programs reported articulation agreements with associate degree programs.
- Approximately one-fifth (18 percent) of master's degree programs reported that students could concurrently pursue a master's and a doctorate degree.
- Less than one-quarter of degree programs at all levels reported offering coursework required for the California Education Specialist Instruction Credential, Early Childhood Special Education Authorization. Twenty-one percent of associate degree, 19 percent of bachelor's degree, and 17 percent of master's degree programs offered this authorization.
- All associate degree programs, and 88 percent of bachelor's and master's degree programs, reported offering coursework required for the California Child Development Permit.
- Associate degree programs were the most likely to offer certificates to students who were working towards a degree.

- ⇒ Almost all (94 percent) associate degree programs offered certificates.
 - ⇒ Approximately one-third of bachelor's degree programs offered certificates.
 - ⇒ Approximately one-quarter of master's degree programs offered certificates.
- The vast majority (88 percent) of associate degree programs offered certificates, and reported that these certificates aligned with the California Child Development Permit, and that credits for the certificate could be applied to the associate degree.

CHAPTER 3: EARLY CHILDHOOD HIGHER EDUCATION FACULTY

Demographics of Faculty Members Participating in the Inventory

Nearly all faculty members who participated in the Inventory were women (95 percent of associate degree faculty, 92 percent of bachelor's degree faculty, and 88 percent of master's degree faculty).

- The average age of associate and master's degree faculty members was 55 years. The average age of bachelor's degree faculty was 49 years. (See **Figure 3.1.**)
 - ⇒ Approximately one-third of associate, one-quarter of bachelor's, and 43 percent of master's degree faculty members reported being age 60 or older, potentially close to retirement.
 - ⇒ Approximately one-half of faculty members at each degree level reported being 40 to 59 years old.
 - ⇒ Approximately one-fifth of bachelor's degree faculty members reported being younger than age 40, compared to less than 10 percent of associate and master's degree faculty members.
- Approximately 60 percent of associate and bachelor's and 79 percent of master's degree faculty members identified as White/Caucasian. (See **Figure 3.2.**)
- While more than 95 percent of faculty members at all degree levels reported fluency in English, less than 15 percent reported fluency in Spanish. (See **Figure 3.3.**)
- About two-thirds of faculty members at each degree level reported that it would be helpful to know another language, primarily Spanish, to improve communication with their students.

Figure 3.3: Age of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

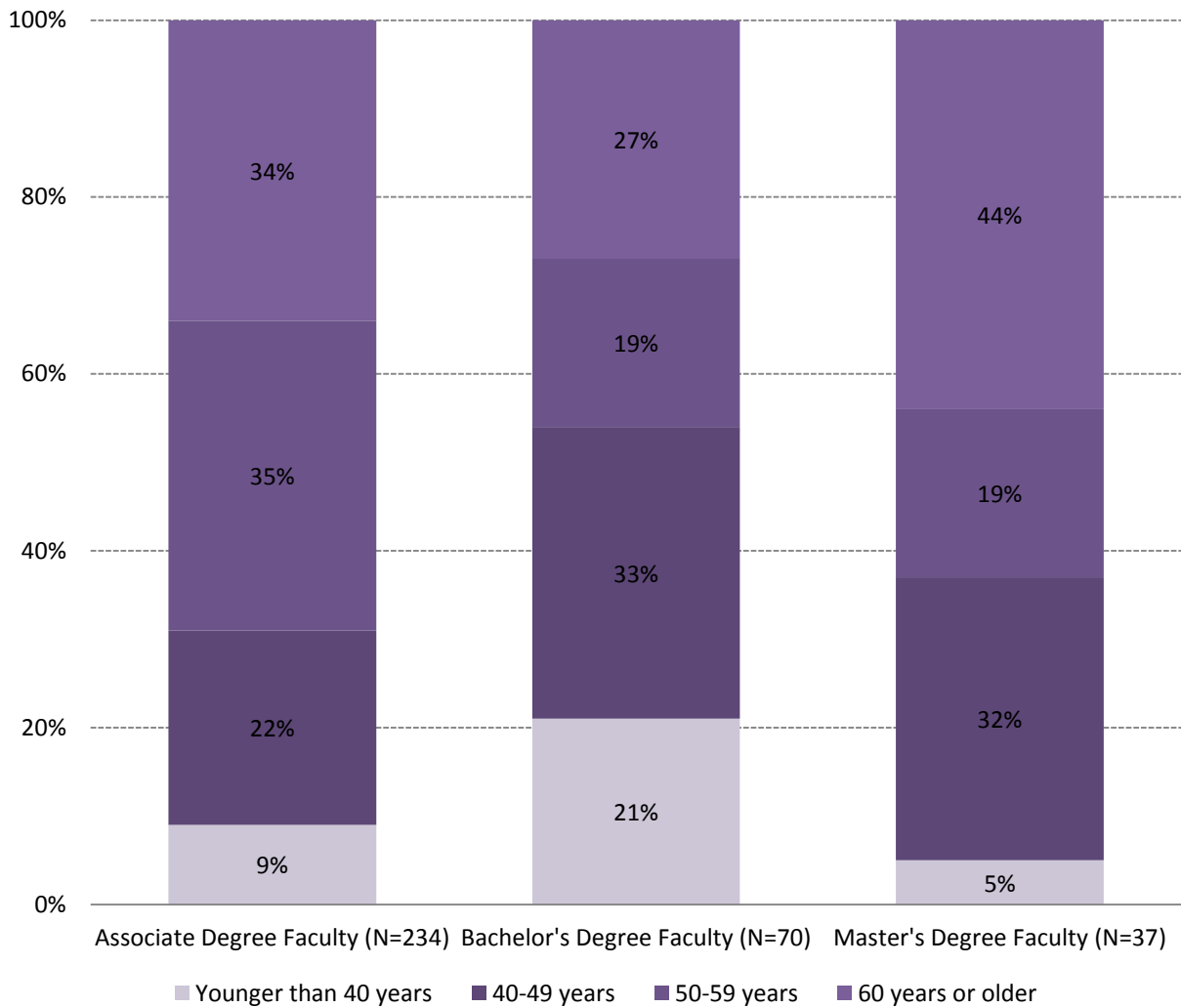
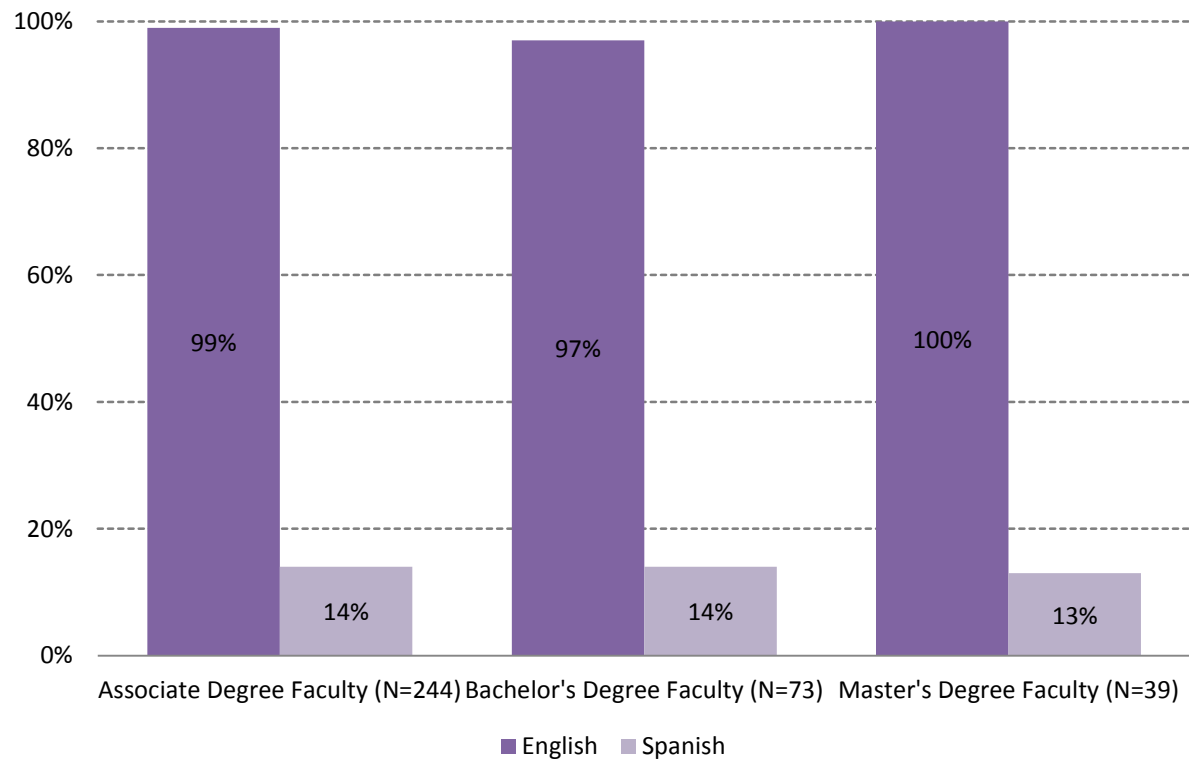


Figure 3.2: Race/Ethnicity of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

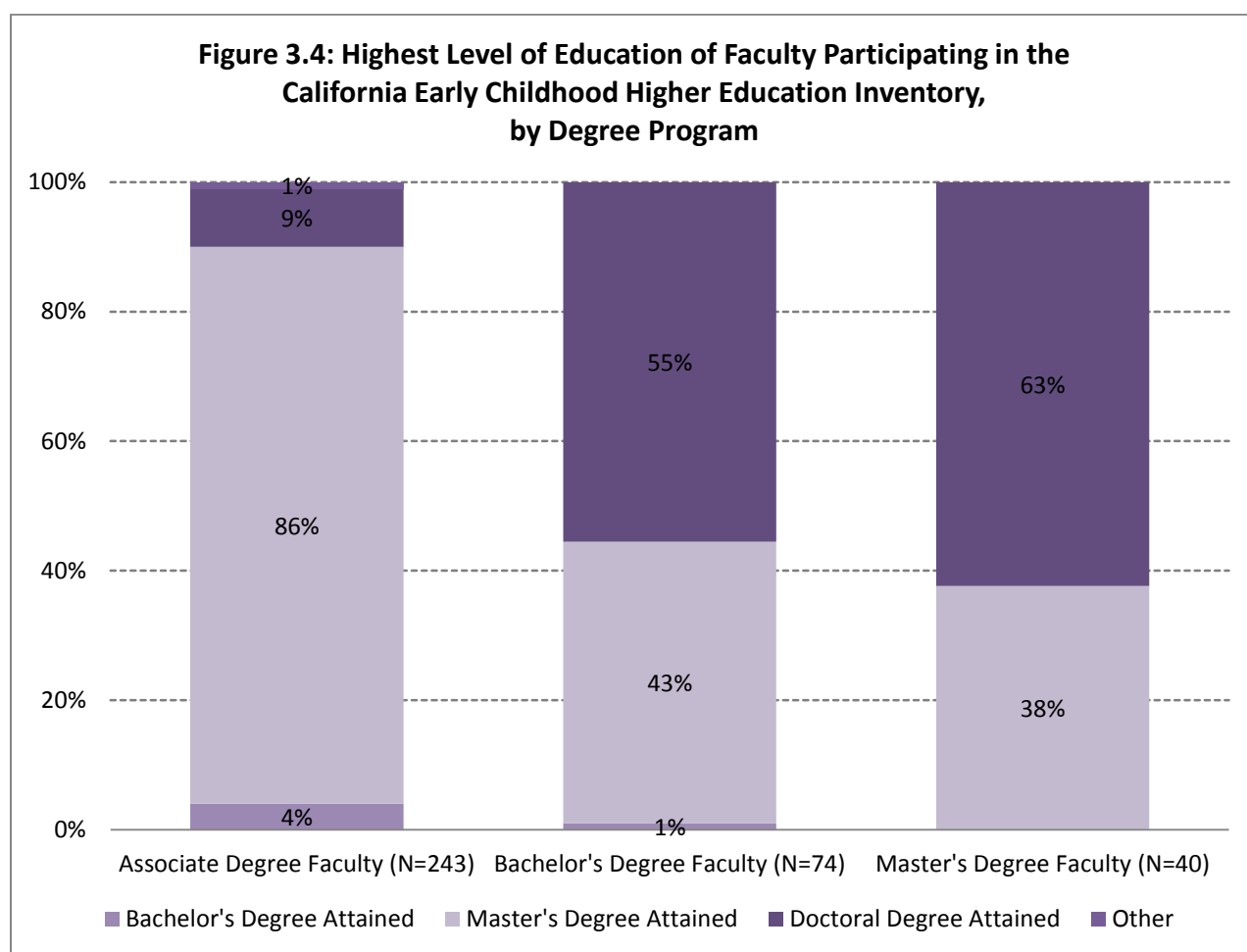


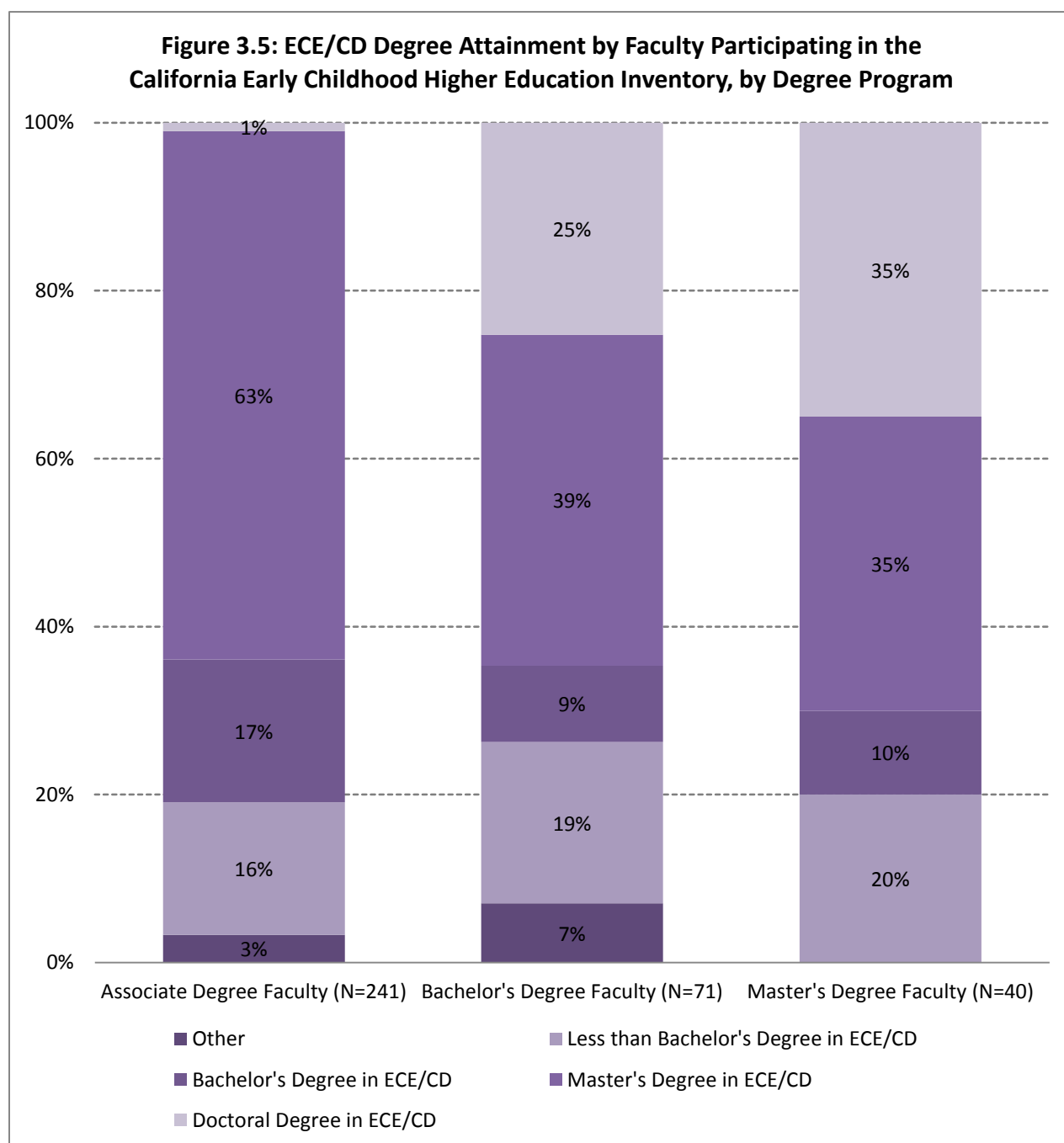
Figure 3.3: Languages Spoken Fluently by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Education Levels of Faculty Members Participating in the Inventory

- The vast majority of associate degree faculty members (86 percent) reported having attained a master's degree as their highest level of education. (See **Figure 3.4.**)
- The majority of bachelor's (55 percent) and master's (63 percent) degree faculty members reported having attained a doctoral degree. (See **Figure 3.4.**)
- Three-quarters or more of faculty members at each degree level reported having attained an early childhood education or child development (ECE/CD) degree at either the bachelor's or graduate level. (See **Figure 3.5.**)





Professional Experiences and Current Employment Status of Faculty Members Participating in the Inventory

Professional Experiences

- On average, associate degree faculty members reported having taught for 13 years, bachelor's degree faculty members 12 years, and master's degree faculty members 15 years at the college or university level. (See **Figure 3.6.**)
 - ⇒ The majority of associate degree (53 percent) and master's degree (60 percent) faculty members reported having taught at the college level for more than 10 years, while slightly less than one-half of the bachelor's degree (47 percent) faculty members had done so.
- On average, associate degree faculty members reported having taught for 12 years, bachelor's degree faculty members eight years, and master's degree faculty members 11 years at their current college or university. (See **Figure 3.7.**)
 - ⇒ Approximately one-half of associate, one-quarter of bachelor's, and one-third of master's degree faculty members reported having taught at their college or university for more 10 years.
- Approximately three-quarters of associate and master's degree faculty, and two-thirds of bachelor's degree faculty, reported having worked in roles other than college-level teaching or administration in the past 10 years. (See **Figure 3.8.**)
 - ⇒ The role most frequently reported by associate (72 percent) and master's (57 percent) degree faculty members was "early childhood professional development provider."
 - ⇒ The two roles most frequently reported by bachelor's degree faculty were "classroom teacher" (48 percent) and "early childhood professional development provider" (45 percent).
 - ⇒ The roles reported by one-fifth or fewer of faculty members at all degree levels included:
 - * Teacher assistant/aide,
 - * Special education teacher,
 - * Early Intervention specialist, and
 - * School principal/other school administrator.
 - ⇒ At all degree levels, adjunct faculty members were more likely to report having worked in other roles than tenure-track faculty. Approximately 80 percent of associate and bachelor's and 90 percent of master's degree adjunct faculty members did so, compared to one-half of associate and master's and 40 percent of bachelor's tenure-track faculty members.

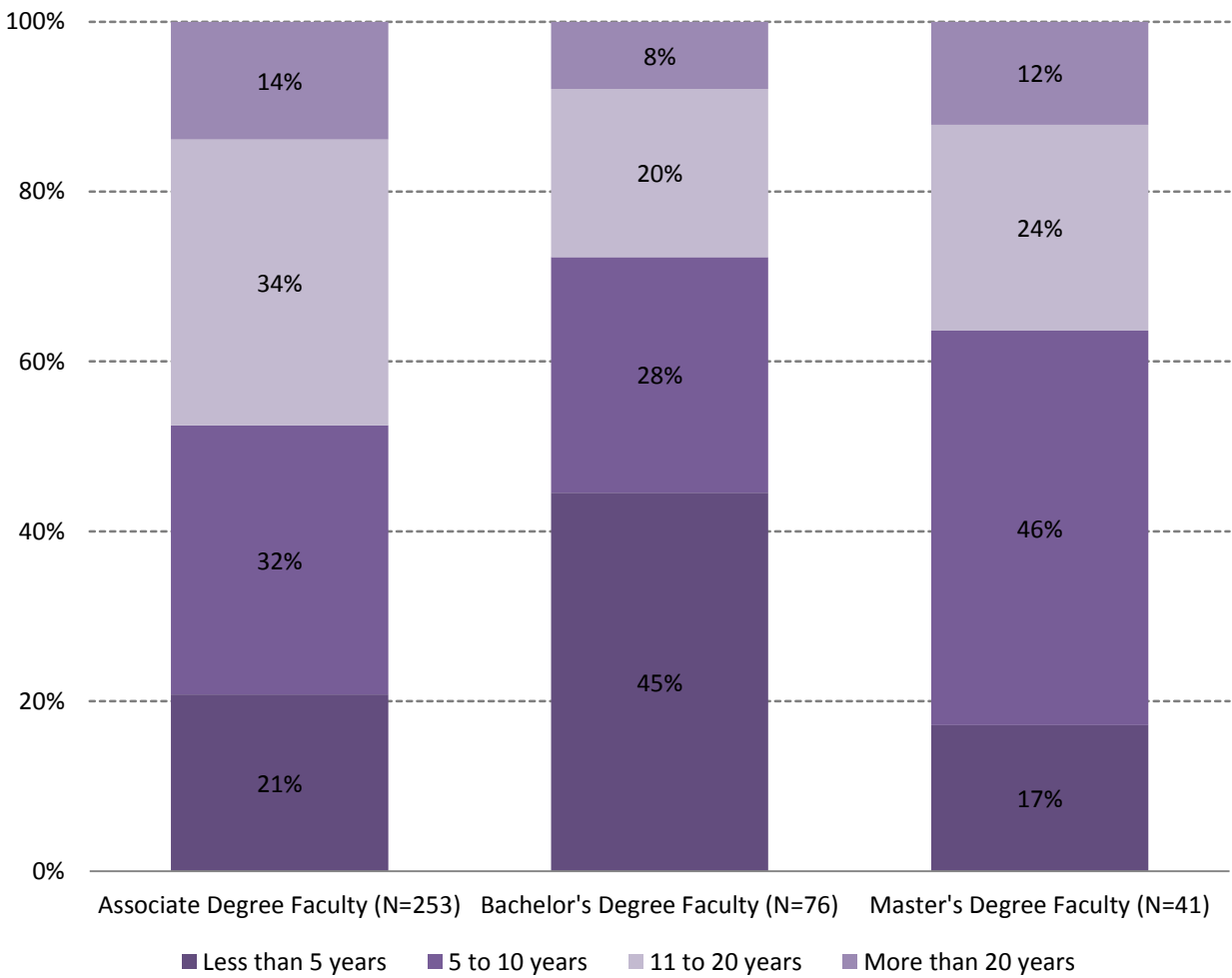
Current Employment

- Approximately two-thirds of associate and one-half of bachelor's and master's degree faculty members identified themselves as adjunct faculty or part-time lecturers. (See **Figure 3.9.**)
- Within each faculty group, the largest percentage of faculty members reported that their primary job responsibility was “exclusively teaching,” but this percentage varied by degree level (64 percent of associate degree faculty, 54 percent of bachelor's degree faculty, and 33 percent of master's degree faculty). (See **Figure 3.10.**)
 - ⇒ After “exclusively teaching,” associate and bachelor's degree faculty members most frequently reported the dual roles of “teaching and supervising students’ field experiences.”
 - ⇒ After “exclusively teaching,” master's degree faculty members most frequently reported the dual roles of “teaching and research.”
- On average, associate and master's degree faculty members reported teaching five courses in a typical academic year, and bachelor's degree faculty members reported teaching four courses. (See **Figure 3.11.**)
 - ⇒ Less than one-third of associate (30 percent) and bachelor's (27 percent) degree, and 41 percent of master's degree, faculty members reported teaching six or more courses in a typical academic year.
- On average, associate degree faculty members reported advising 60 students in a typical year, bachelor's degree faculty members reported advising 79 students, and master's degree faculty reported advising 62 students. (See **Figure 3.12.**)
 - ⇒ Approximately one-quarter of bachelors’ and master's degree faculty members reported advising more than 100 students in a typical year.
 - ⇒ Only 14 percent of associate degree faculty members reported advising more than 100 students.

Figure 3.6: Number of Years Teaching at the College or University Level for Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Figure 3.7: Number of Years Teaching at Current College or University for Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Other Employment

Approximately two-thirds of faculty members at each degree level (71 percent of associate degree faculty, 66 percent of bachelor's degree faculty, and 72 percent of master's degree faculty) reported that they had worked in roles other than college-level teaching or administration in the past 10 years. **Figure 3.8** displays the most frequently mentioned job roles.

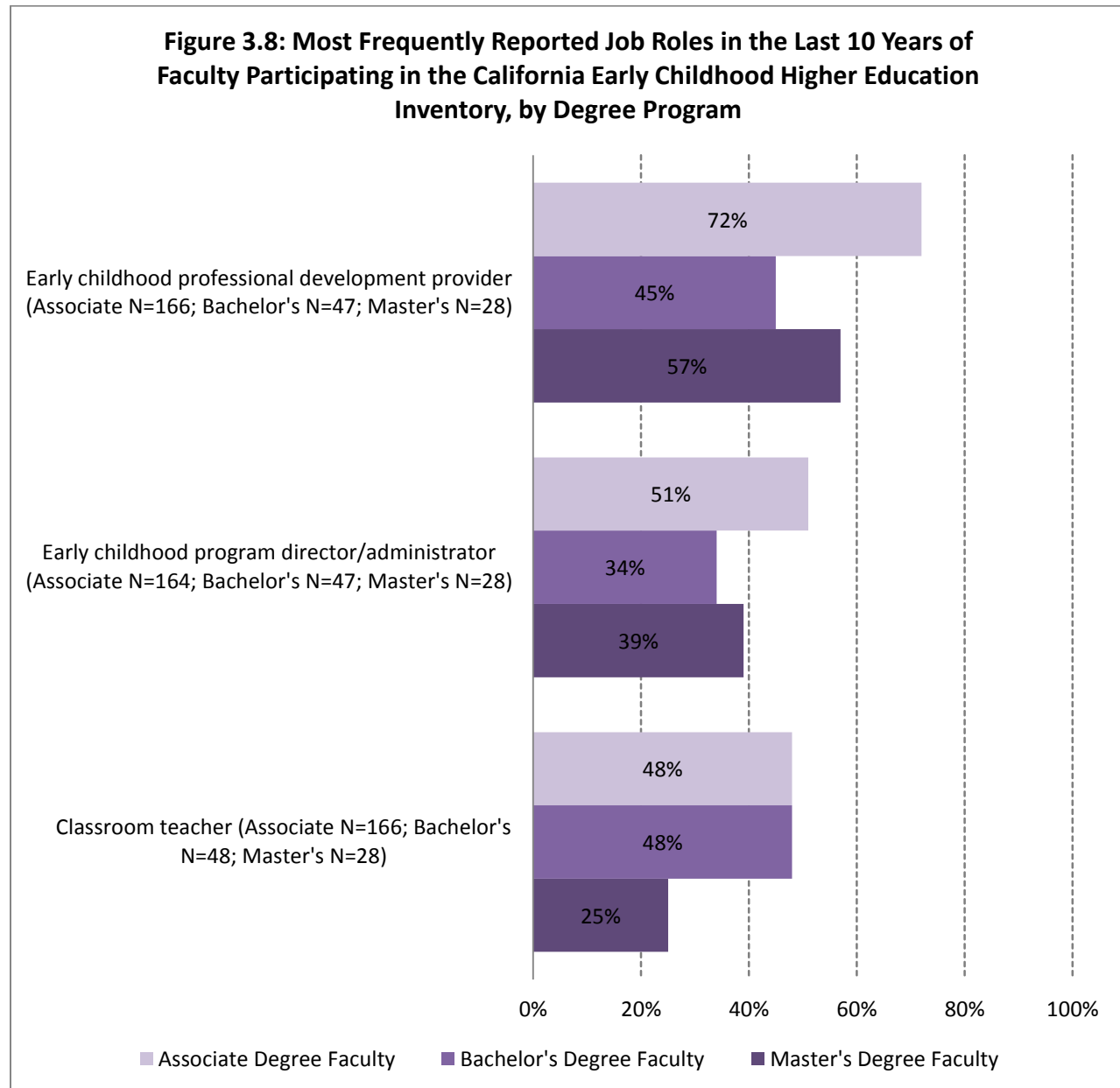


Figure 3.9: Employment Status of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

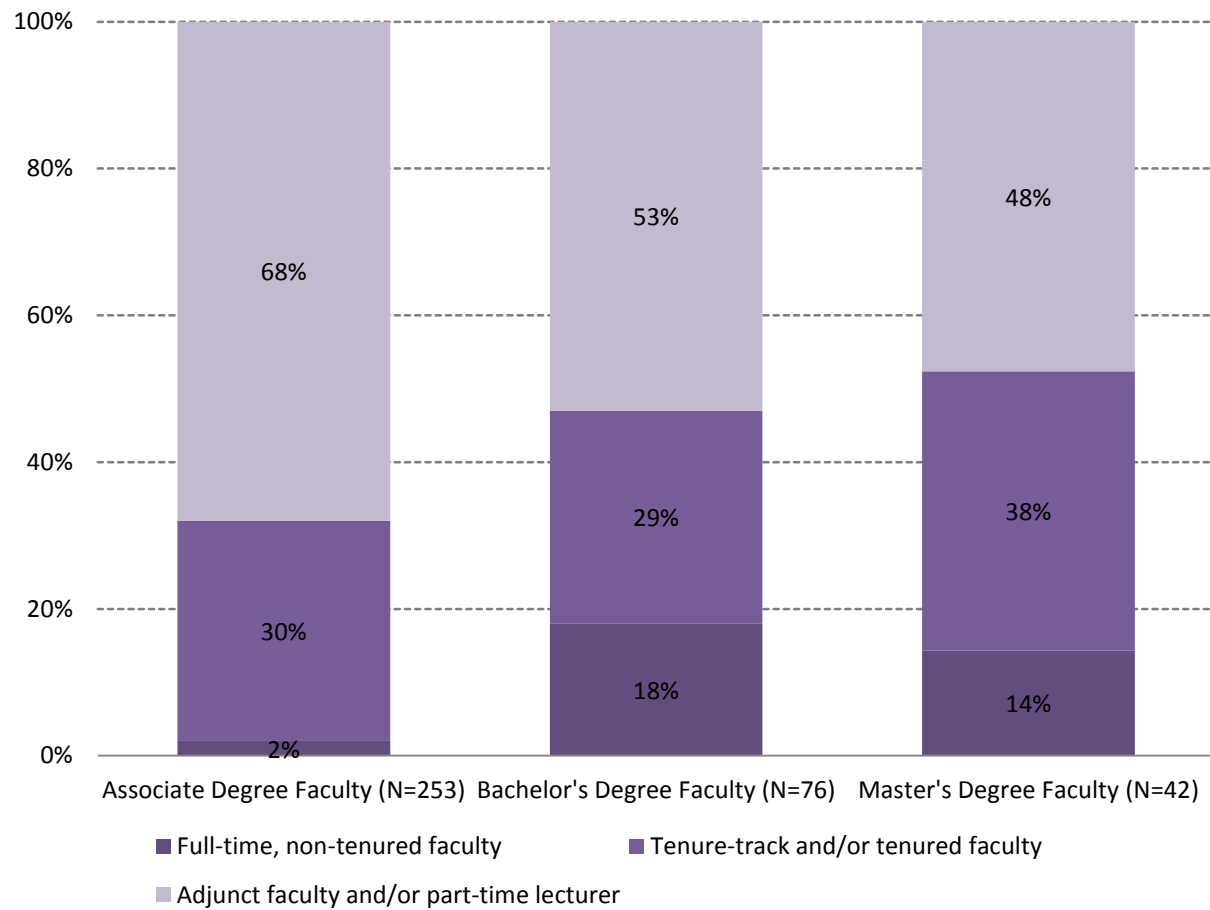
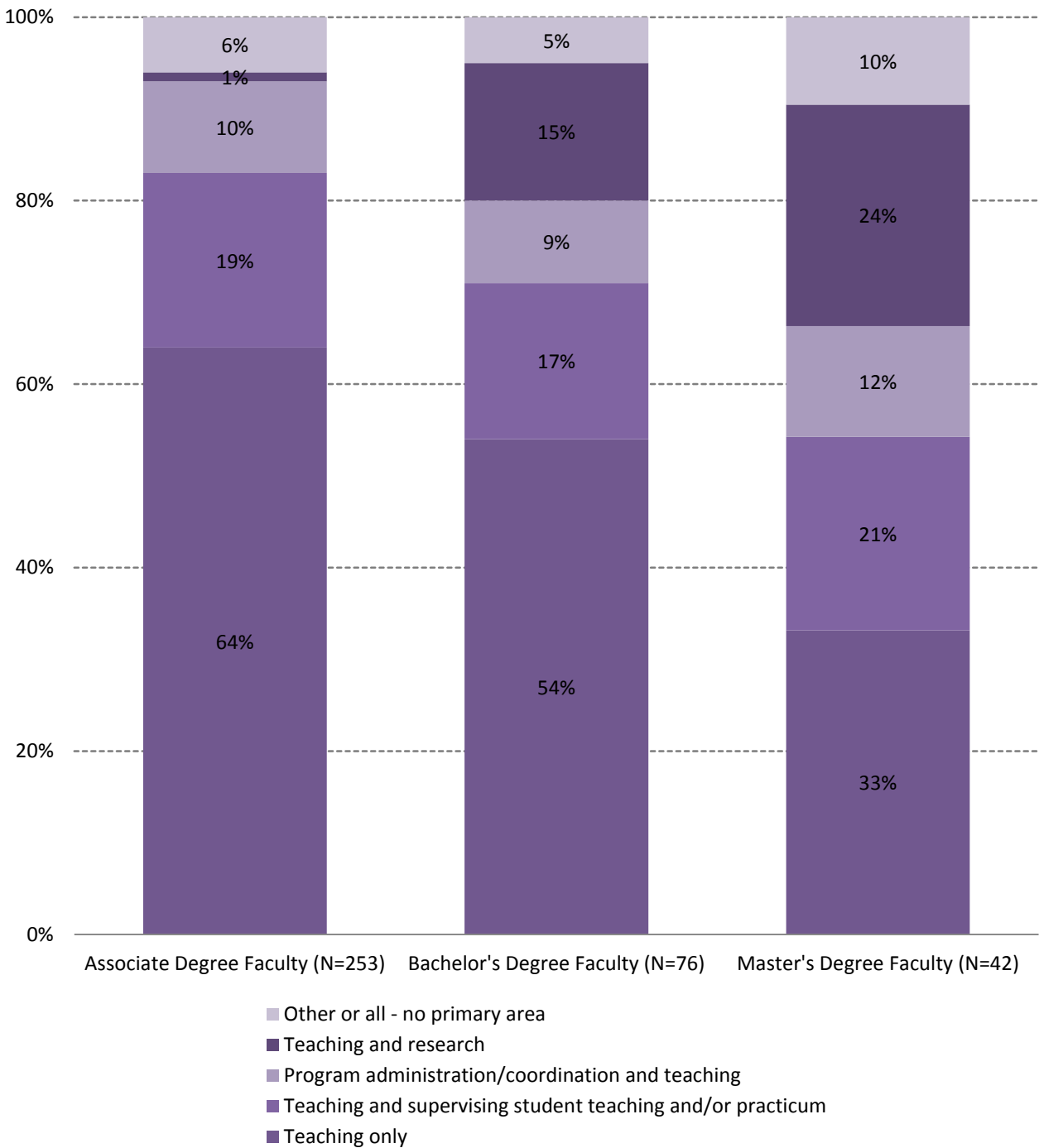


Figure 3.10: Primary Responsibility of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



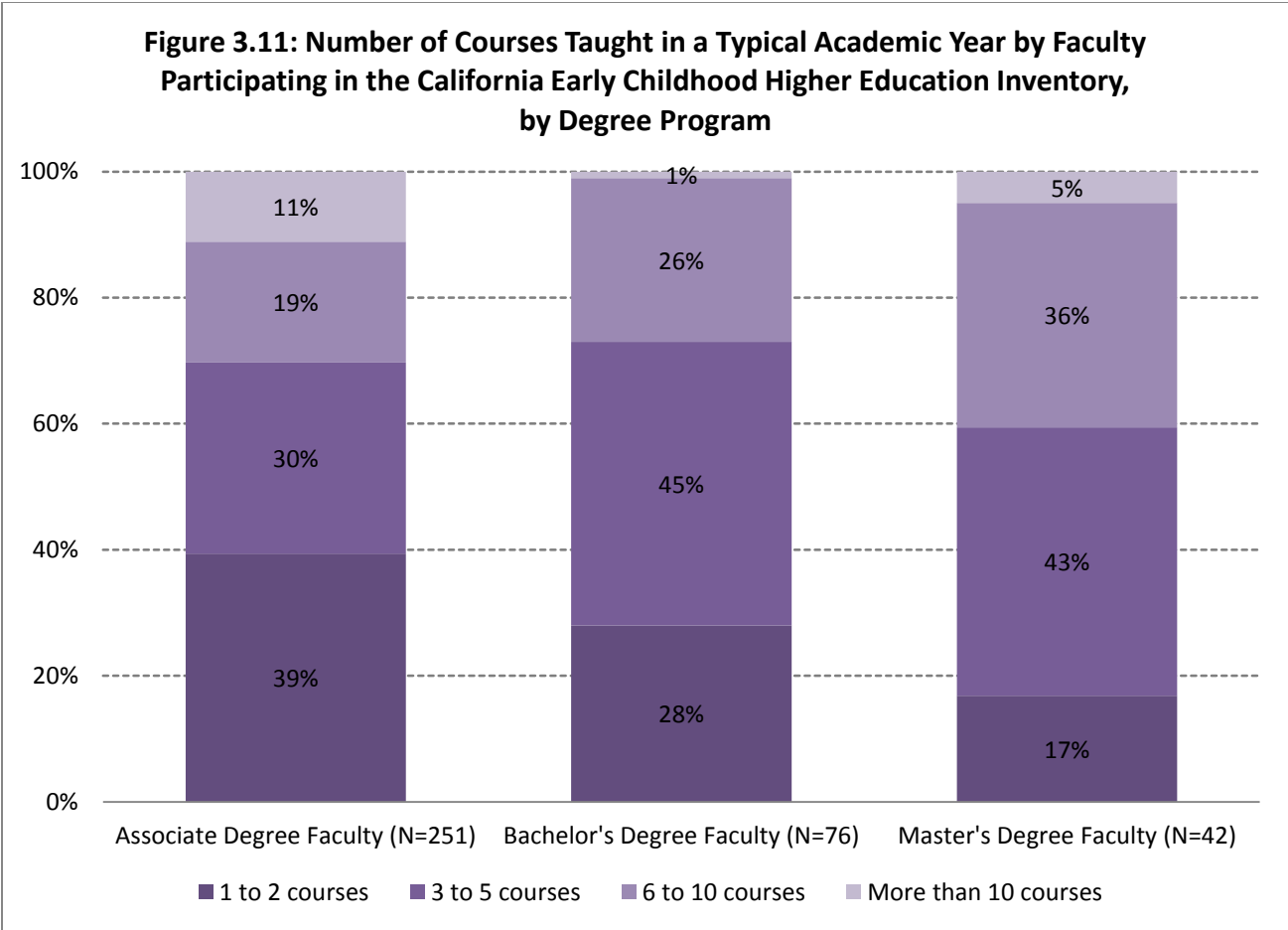
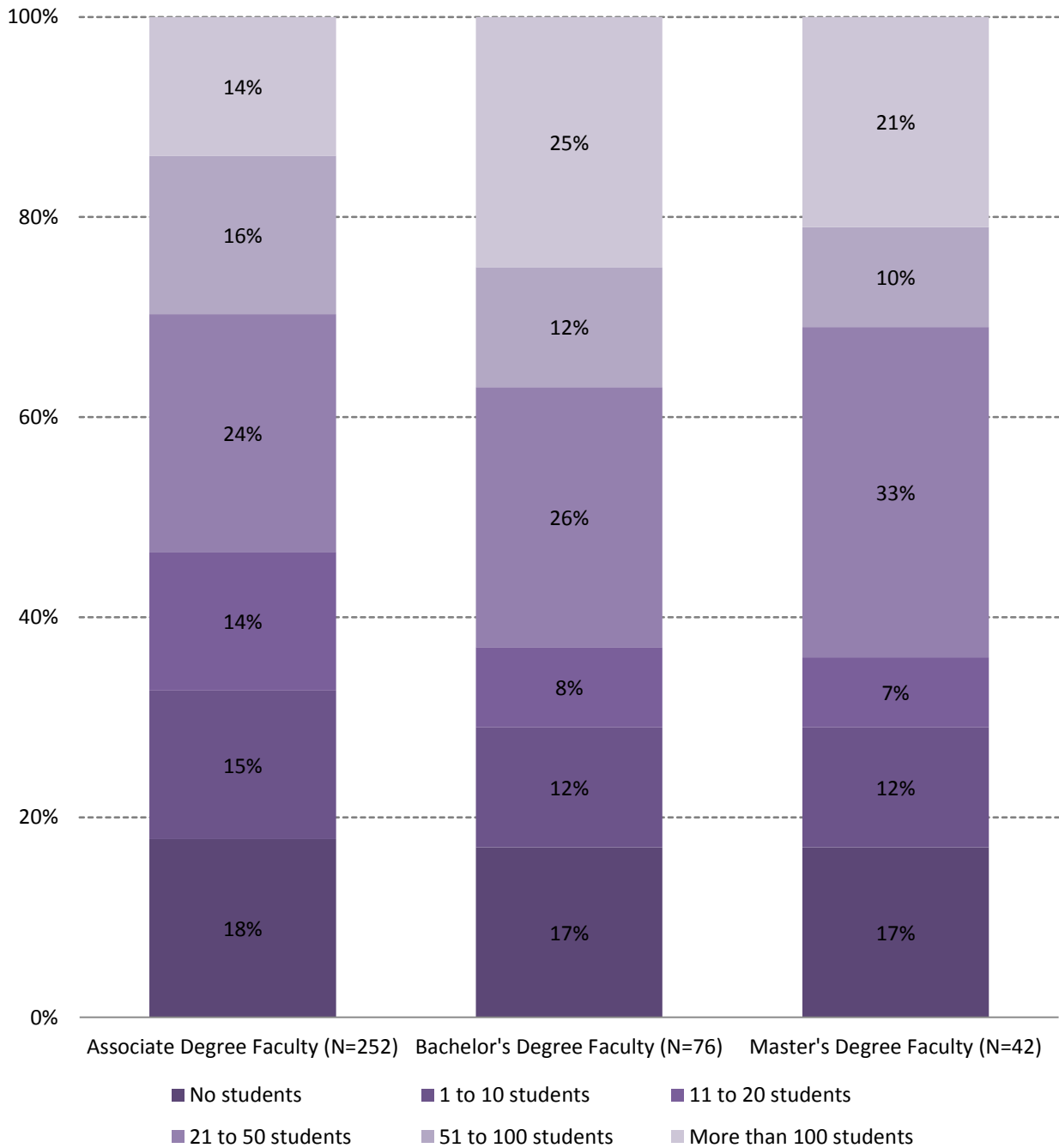


Figure 3.12: Number of Students Advised in a Typical Academic Year by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Teaching Focus and Age-Group Expertise of Faculty Members Participating in the Inventory

The Inventory asked faculty members to indicate their primary teaching focus as either “child development and learning,” “curriculum and teaching methods,” or “both equally.” They were also asked to indicate their expertise related to various age groups of children, from birth through the early elementary grades.

- Associate degree faculty members were the most likely among faculty at all levels to report focusing on “curriculum and teaching methods,” either exclusively or equally with “child development and learning.” Almost three-quarters (71 percent) did so, compared to 44 percent of bachelor’s and 55 percent of master’s degree faculty members. (See **Figure 3.13.**)
- Bachelor’s degree faculty members were the most likely to report focusing exclusively on “child development and learning.” More than one-half (57 percent) did so, compared to 29 percent of associate and 45 percent of master’s degree faculty members. (See **Figure 3.13.**)
- Less than 15 percent of faculty members at each degree level reported focusing exclusively on “curriculum and teaching methods.” (See **Figure 3.13.**)
- Almost all faculty members at all degree levels reported expertise related to preschool-age children, either exclusively or in addition to older and younger children. (See **Figure 3.14.**)
- Associate degree faculty members (72 percent) were more likely to report expertise related to infants and toddlers (either exclusively or in addition to older age groups) than were bachelor’s (58 percent) or master’s (61 percent) degree faculty members. (See **Figure 3.14.**)
- Associate degree faculty members (41 percent) were less likely to report expertise related to children in the early elementary grades (either exclusively or in addition to younger age groups) than were bachelor’s (57 percent) or master’s (62 percent) degree faculty members. (See **Figure 3.14.**)

Figure 3.13: Primary Teaching Focus of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

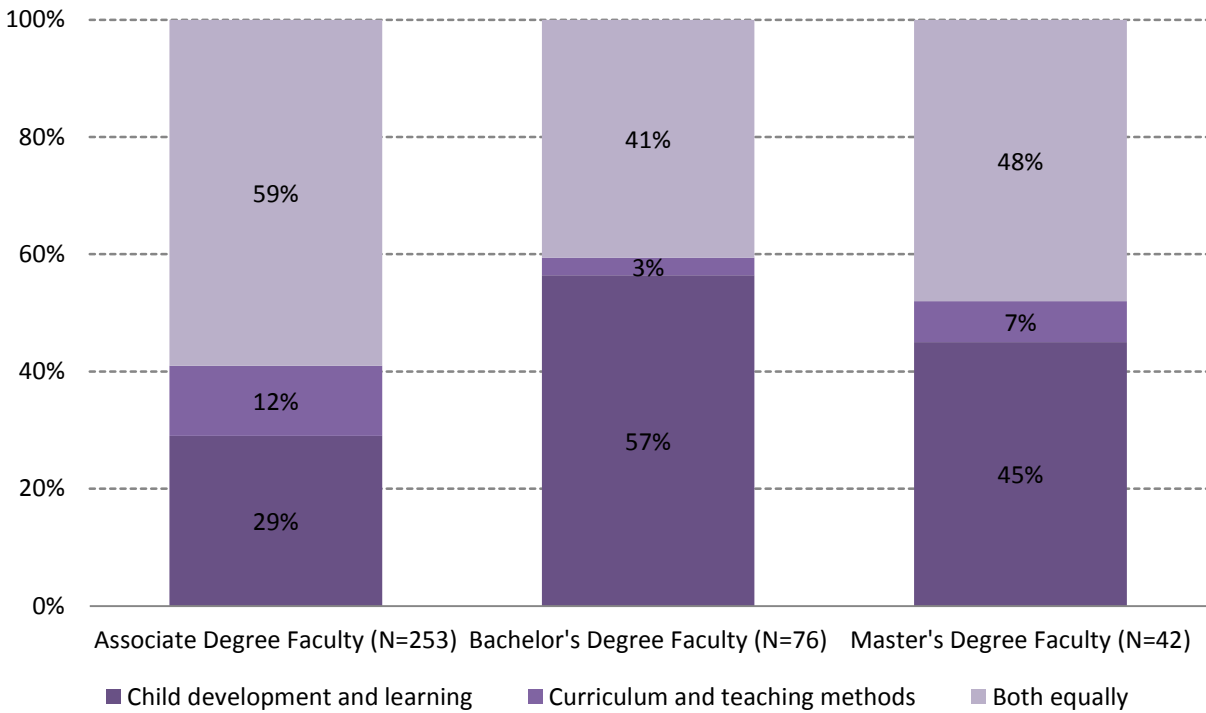
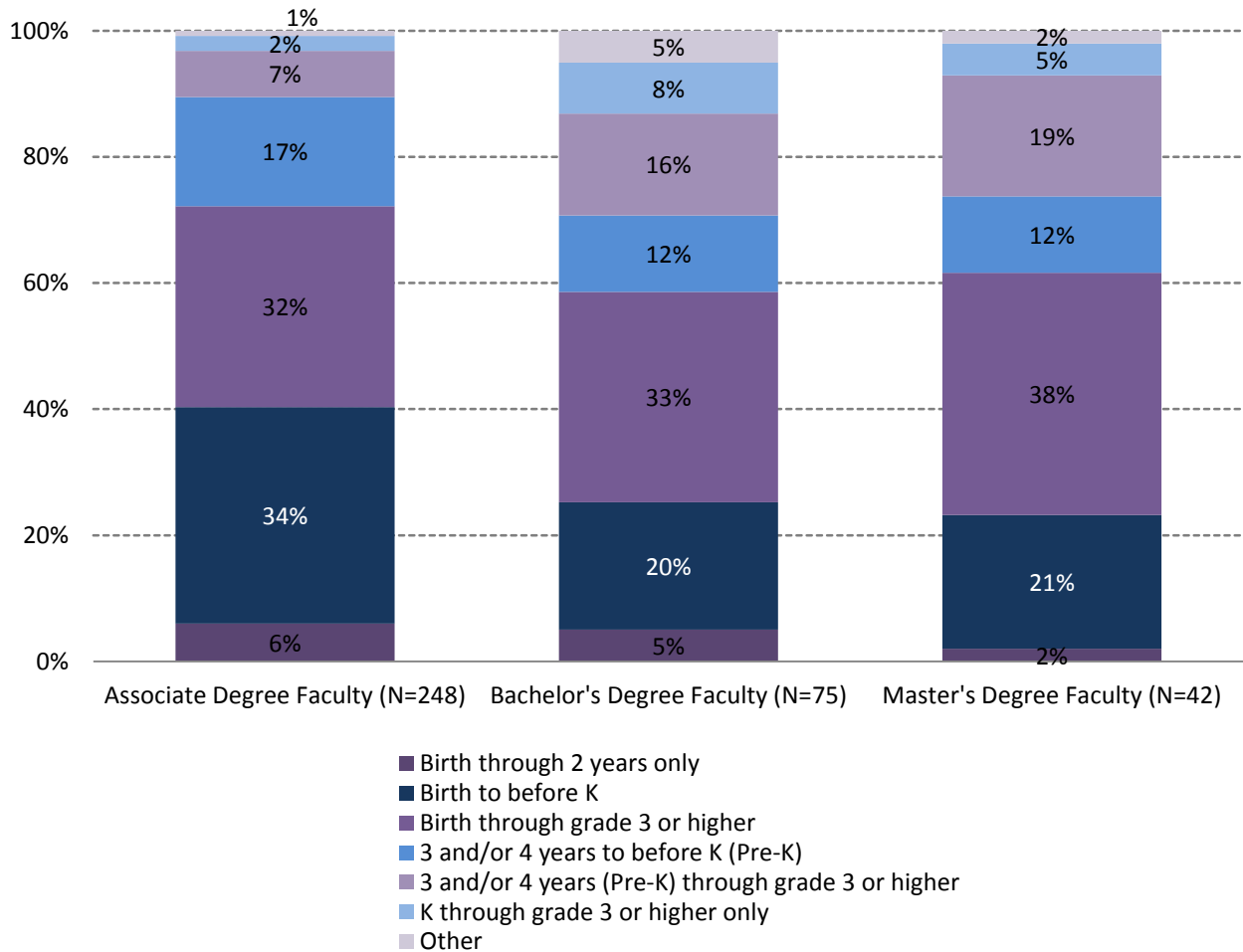


Figure 3.14: Primary Age Group Expertise of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Content and Age-Group Focus of Coursework Taught by Faculty Members Participating in the Inventory

The Inventory asked faculty members to identify the topics covered in the courses they had taught in the past two years. The topics were categorized into broad content areas:

1. Child Development and Learning,
2. Teaching Diverse Child Populations,
3. Teaching and Curriculum,
4. Teaching Skills in Early Childhood Settings,
5. Early Childhood Administration and Leadership,
6. Family Engagement, and
7. Early Mathematics

See **Figures 3.15-3.19** for lists of topics.

Faculty members were then asked to specify the age group focus of the topics covered in their coursework. The four age groups were:

1. Infants and toddlers (birth to 2 years),
2. Preschool (3 and/or 4 years),
3. Transitional Kindergarten, and
4. Kindergarten through 3rd grade or higher.

See **Appendix Tables A3-1** through **A3-4**.

The Family Engagement and Early Mathematics content areas were explored in greater depth. These findings are reported in Section 3.

- Two-thirds or more of faculty members at all degree levels reported teaching all topics within the contents areas of:
 - ⇒ Child development and learning (see **Figure 3.15** for list of topics),
 - ⇒ Teaching diverse child populations (see **Figure 3.16** for list of topics), and
 - ⇒ Teaching skills in early childhood settings (see **Figure 3.18** for list of topics).
- The percentage of faculty members reporting teaching all topics in the “teaching and curriculum” content area varied by degree level, with the associate degree faculty most likely to do so. (See **Figure 3.17** for list of topics.)
 - ⇒ Two-thirds or more of associate degree faculty members reported teaching all teaching and curriculum topics.

- ⇒ Less than one-half of bachelors and master's degree faculty members reported coursework in "teaching science skills to children."
- Faculty members at all degree levels were less likely to report teaching all topics within the early childhood administration and leadership content area than all topics within the other content areas described above. (See **Figure 3.19** for list of topics.)
 - ⇒ At least one-half of associate degree faculty members reported teaching eight of the 15 topics listed in the Inventory.
 - ⇒ At least one-half of bachelor's degree faculty members reported teaching four of the 15 topics.
 - ⇒ At least one-half of master's degree faculty members reported teaching five of the 15 topics.
- The largest percentage of faculty members at all levels reported teaching the following early childhood administration and leadership topics:
 - ⇒ Assessment and documentation to inform program quality,
 - ⇒ Guiding practitioners in implementing curriculum and appropriate teaching strategies,
 - ⇒ Building relationships with other teachers and/or early childhood professionals, and
 - ⇒ Assessment and documentation to inform teaching and learning.
- The topics mentioned least by faculty members included:
 - ⇒ Managing and maintaining facilities,
 - ⇒ Fiscal procedures and management, and
 - ⇒ Grant management and proposal writing.
- Overall, faculty members at all degree levels were more likely to report focusing content on working with preschoolers than with children in other age groups. (See **Appendix Tables A3-1** through **A3-4**.)
- Although there were variations by content areas, the associate degree faculty members were the most likely overall to report focusing content on infants and toddlers, and least likely to report focusing content on children in the early elementary grades. (See **Appendix Tables A3-1** through **A3-4**.)

*The following figures display the percentages of faculty members at each degree level who reported teaching the topic within the past two years. See **Appendix Tables A3-1** through **A3-4** for the age-group focus of the content taught.*

Figure 3.15: Coursework on Child Development and Learning Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

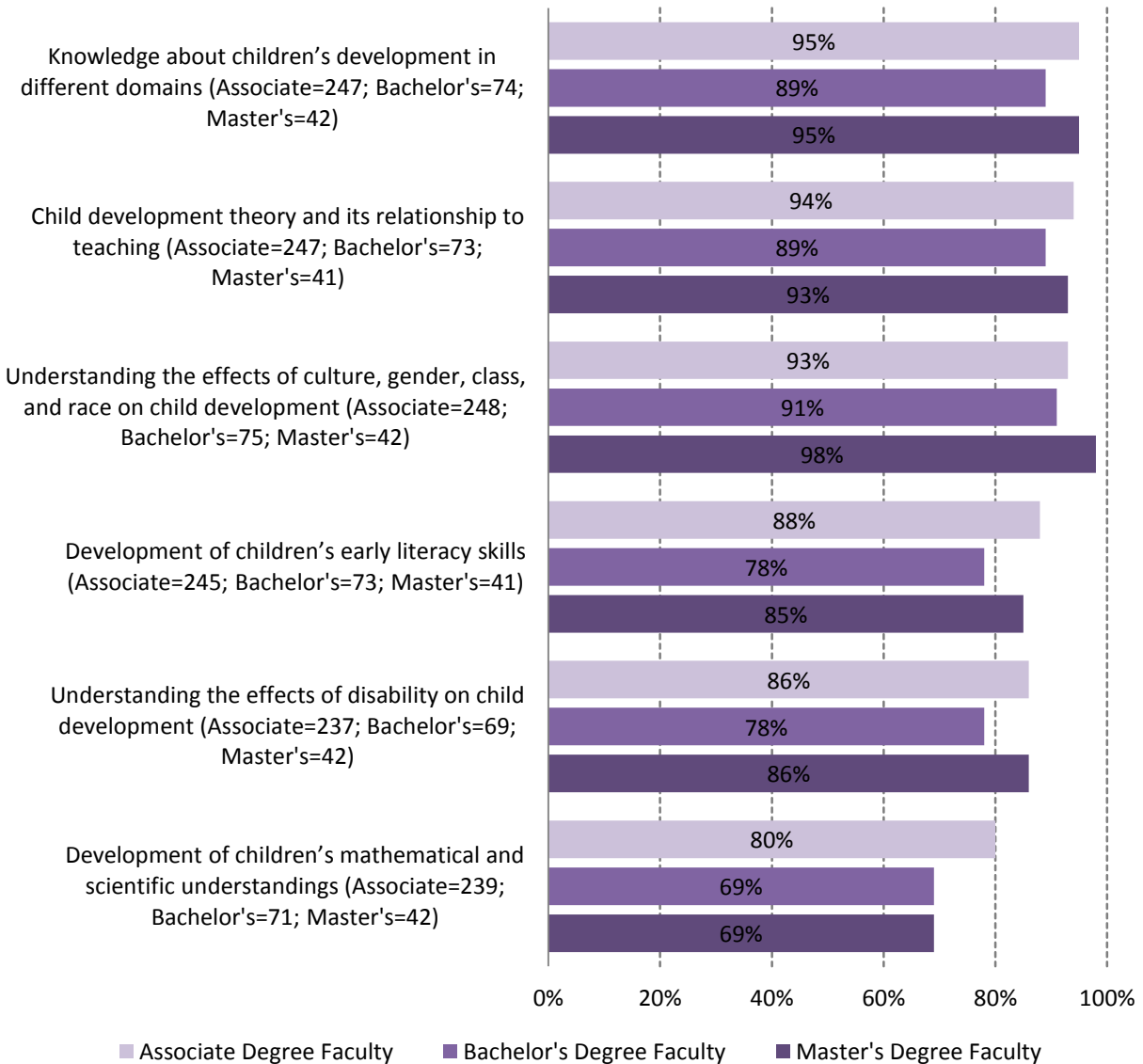


Figure 3.16: Coursework on Teaching Diverse Child Populations Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

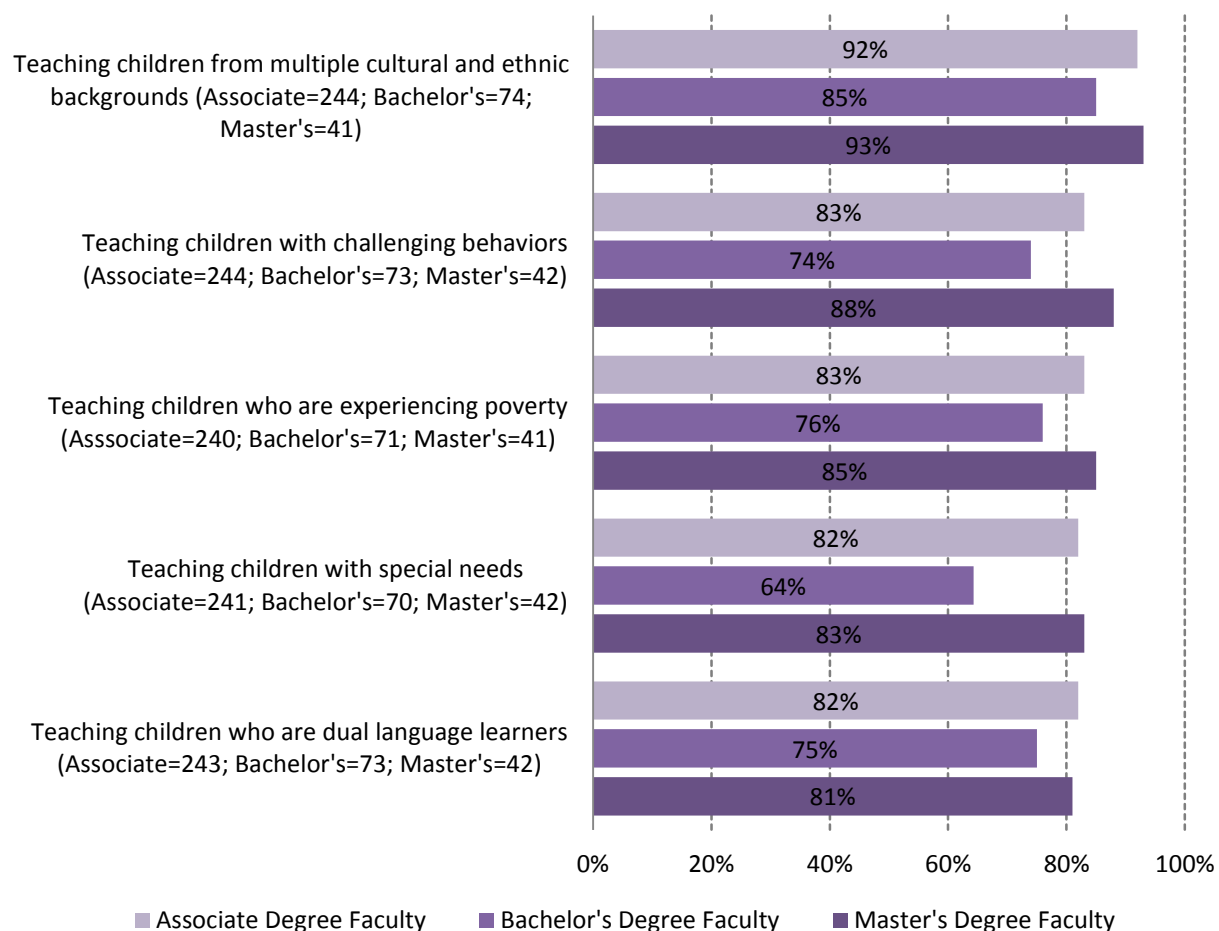


Figure 3.17: Coursework on Teaching and Curriculum Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

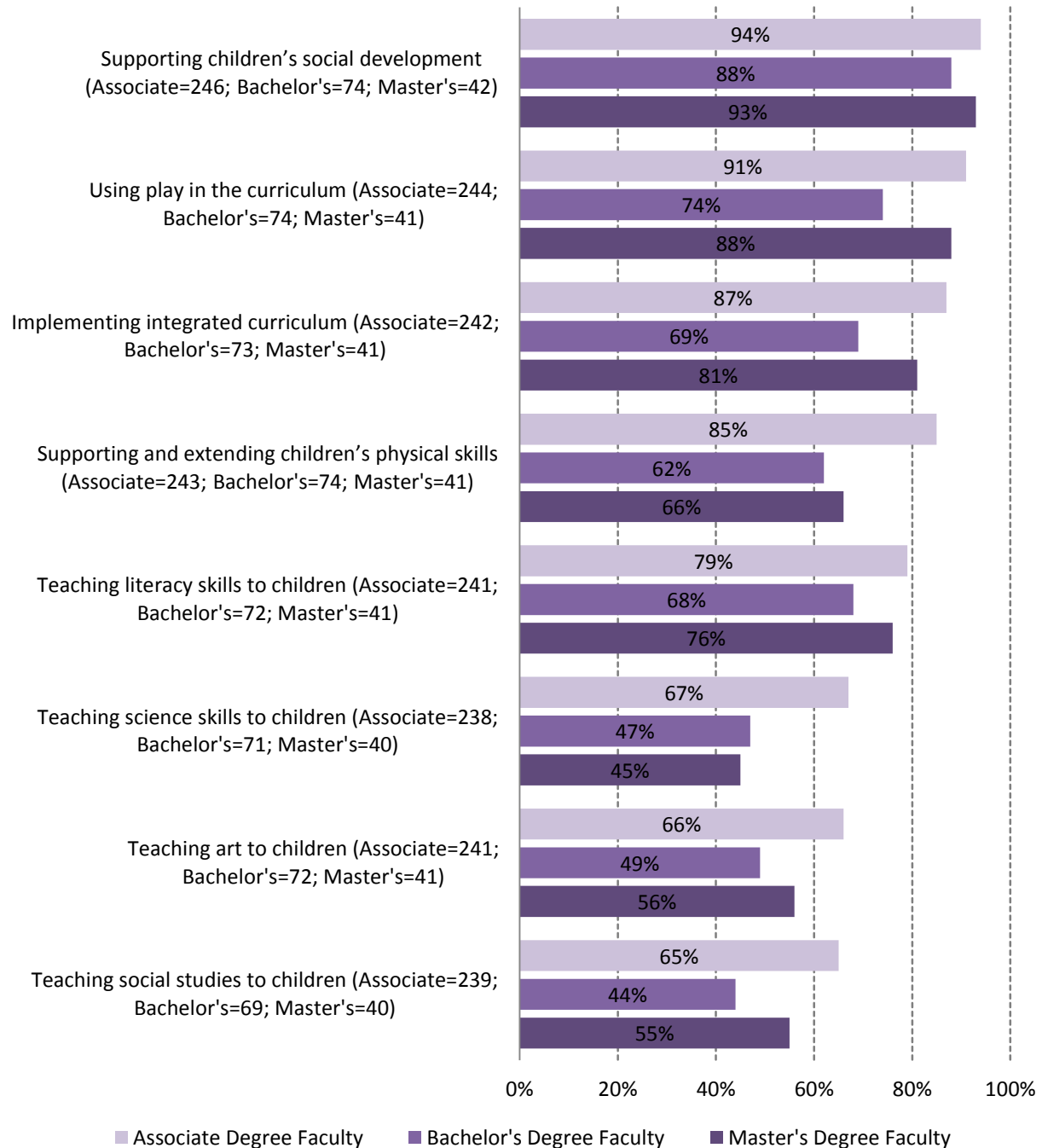


Figure 3.18: Coursework on Teaching Skills in Early Childhood Settings Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

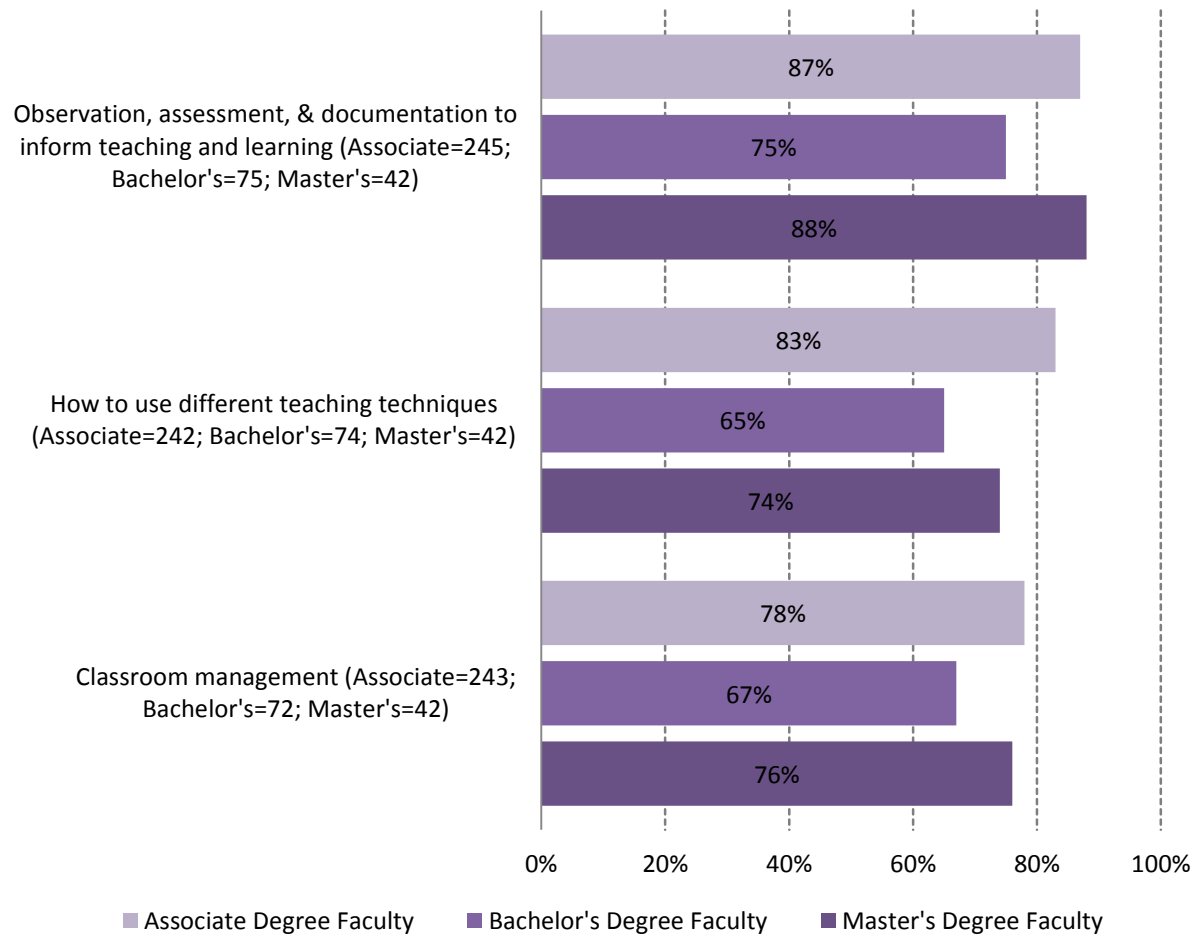


Figure 3.19: Coursework on Administration and Leadership Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

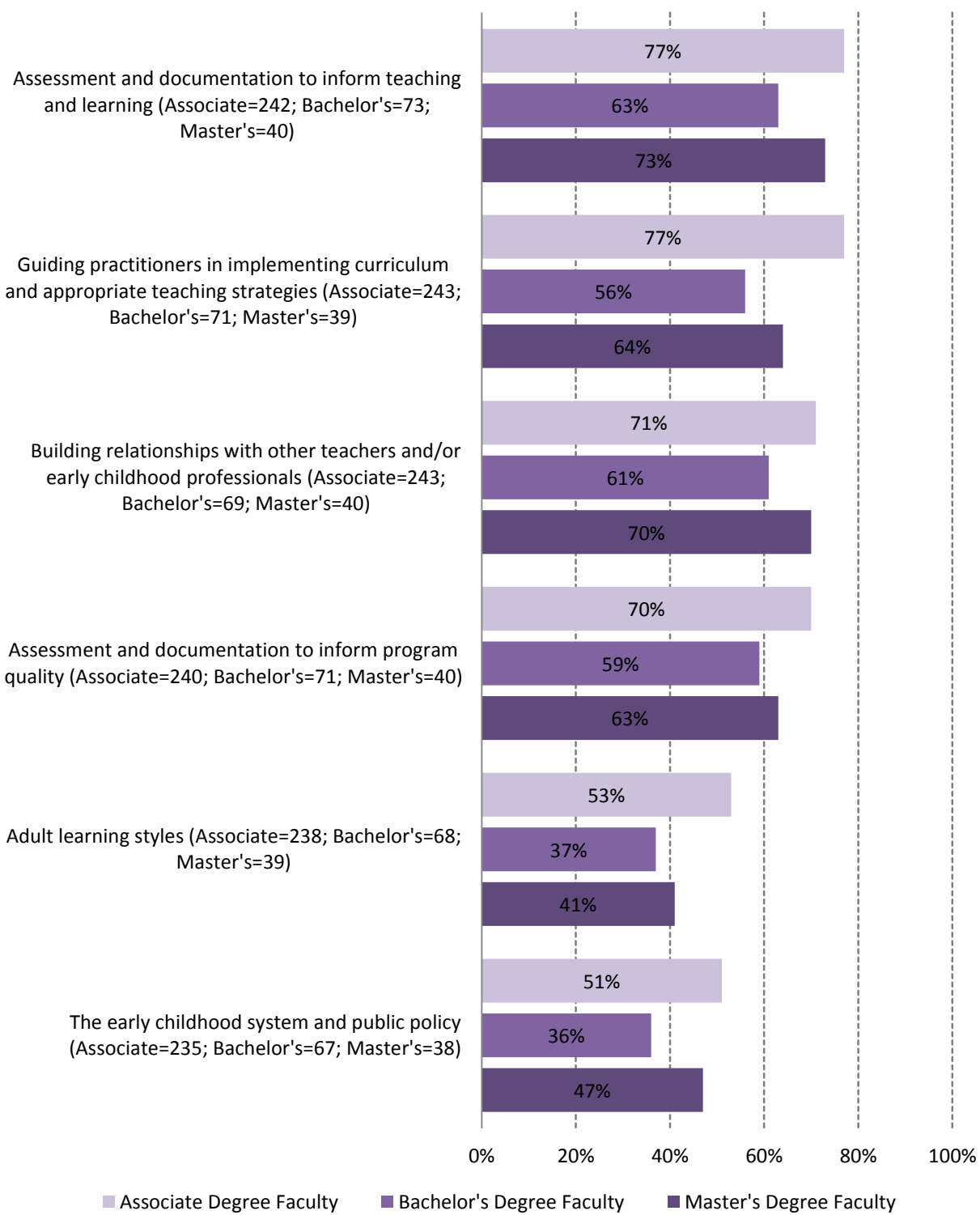
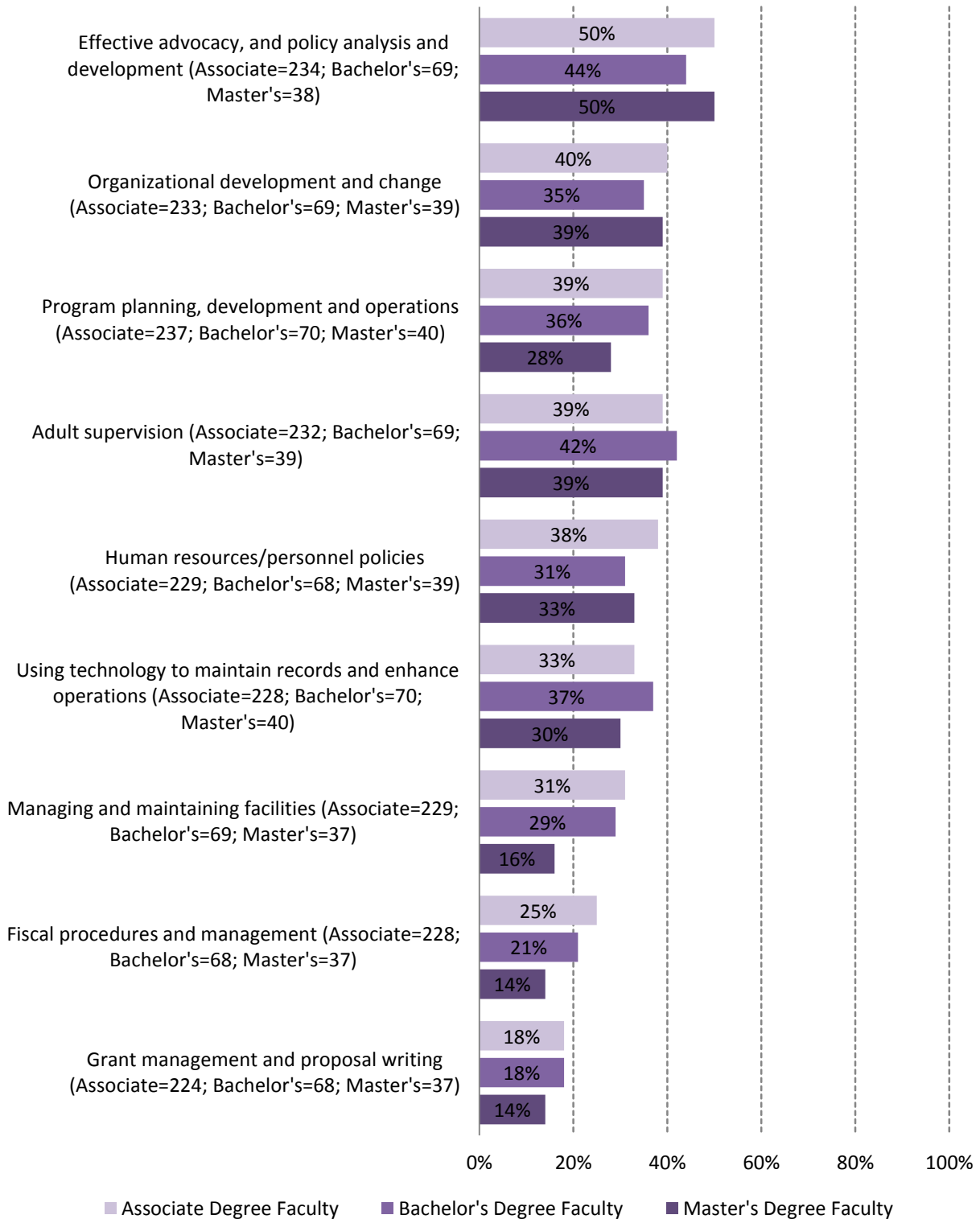


Figure 3.19: Coursework on Administration and Leadership Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program (Continued)



Professional Development Opportunities and Needs of Faculty Members Participating in the Inventory

The Inventory asked faculty members if they had participated in professional development opportunities in the past three years. The Inventory then listed 27 topics and asked faculty members who responded “yes” to indicate the opportunities in which they had participated. The list included multiple topics related to:

- Diverse child populations,
- Adult learners,
- Teaching skills and assessment, and
- Early childhood administration and leadership.

See **Figure 3.20** and **Appendix Table A3-5** for lists of topics.

The list also included topics related to the two areas of special interest:

- Family engagement,¹ and
- Early mathematical development.¹

The next series of questions asked faculty members to indicate areas in which it would be helpful to gain additional knowledge or training. Faculty members were provided with a list of 22 topics, and asked to indicate whether it would be helpful to have additional knowledge or training on these topics. The list included multiple topics related to:

- Diverse child populations,
- Adult learners,
- Teaching skills and assessment, and
- Early childhood administration and leadership.

The list also included one general topic related to early mathematics, and one general topic related to family engagement.

See **Figure 3.21** and **Appendix Table A3-6** for lists of topics.

¹ In separate questions, the Inventory asked more specifically about faculty members’ interest in professional development related to early mathematics and family engagement. These findings are reported in Chapter 5.

Professional Development Opportunities

- The vast majority of faculty members at all degree levels reported having participated in professional development opportunities during the last three years (97 percent of associate degree faculty, 82 percent of bachelor's degree faculty, and 93 percent of master's degree faculty).
- The three most frequently reported professional development opportunities, participated in by at least 40 percent of faculty members at all degree levels, involved content related to teaching diverse groups of children, and family engagement. (See **Figure 3.20** and **Appendix Table A3-5** for list of topics.) The topics were:
 - ⇒ Teaching practitioners to work with children from diverse cultural backgrounds,
 - ⇒ Teaching practitioners to work with children with special needs, and
 - ⇒ Strategies for engaging families in children's learning.
- The professional development opportunities participated in by less than 20 percent of faculty members at all levels were related to early mathematics. (See **Figure 3.20** and **Appendix Table A3-5** for list of topics.) These included:
 - ⇒ Strategies to help practitioners who struggle with mathematics to build confidence in their ability to facilitate children's mathematical understanding and skill,
 - ⇒ Teaching practitioners to implement instructional strategies that support mathematical understanding in children in kindergarten through grade 3 or higher,
 - ⇒ Domains and sequences of mathematical development of young children,
 - ⇒ Teaching practitioners to introduce explicit mathematical concepts through planned experiences, and
 - ⇒ California and national guidelines related to mathematical understanding in young children.

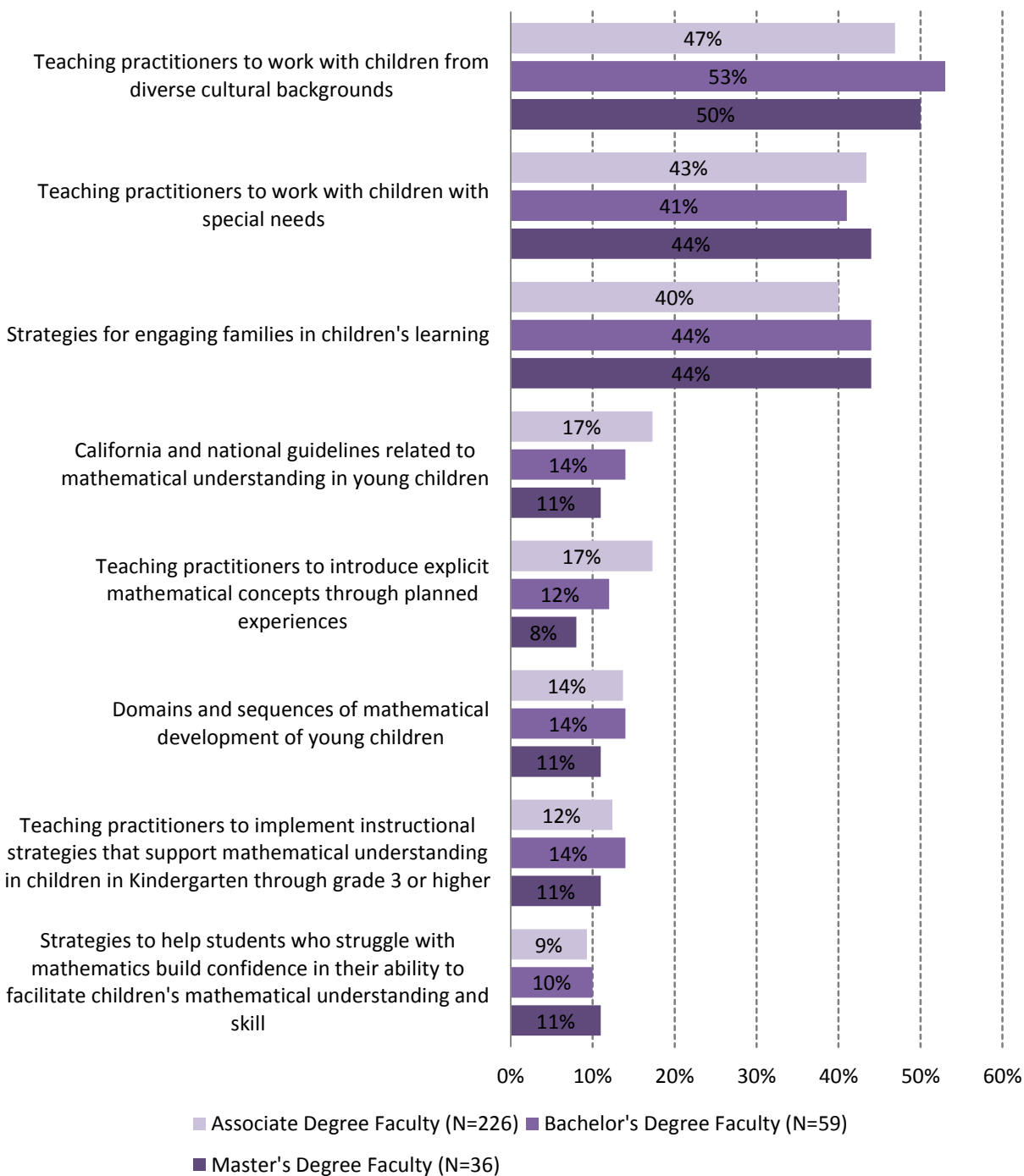
Professional Development that Would Be Helpful to Faculty Members

- Faculty members at all degree levels indicated a number of areas in which it would be helpful to gain additional knowledge or training. The topics mentioned by at least 40 percent of faculty at each degree level focused on diversity and technology. (See **Figure 3.21** and **Appendix Table A3-6** for list of topics.) These included:
 - ⇒ Teaching linguistically, economically, culturally, and/or ethnically diverse college students,
 - ⇒ Teaching practitioners to work with specific groups of children (dual language learners, and/or children with special needs), and
 - ⇒ Using technology to promote adult learning, and teaching practitioners to use technology with children.

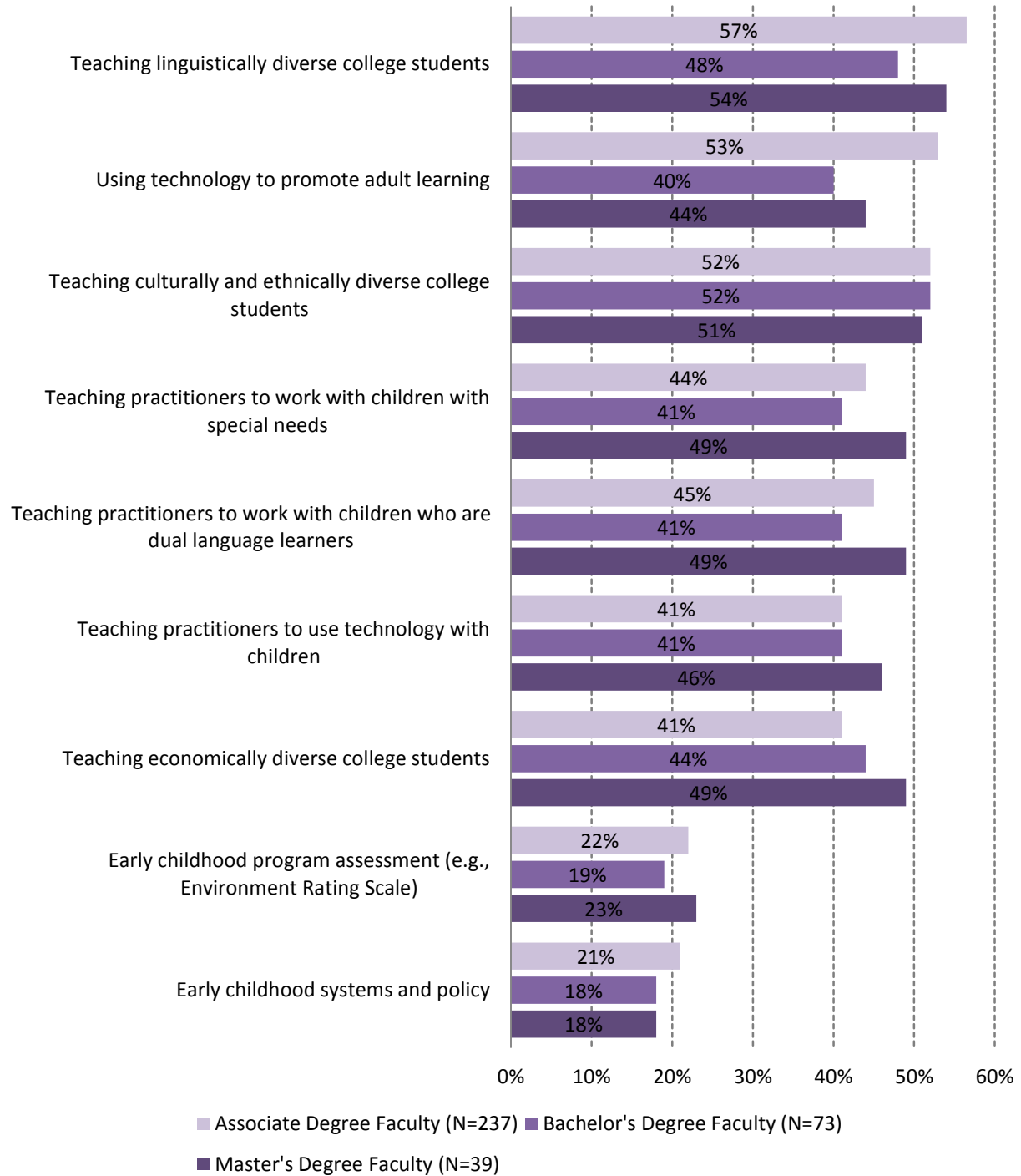
***Figure 3.20** displays the professional development experiences reported most frequently (by at least 40 percent of faculty members at each degree level) and least frequently (by less than 20 percent of faculty members at each degree level). **Appendix Table A3-5** displays the full list of professional development experiences.*

***Figure 3.21** displays the professional development topics mentioned most frequently as helpful (by at least 40 percent of faculty members at each degree level) and least frequently (by less than 25 percent of faculty members at each degree level). **Appendix Table A3-6** displays the full list of professional development topics.*

**Figure 3.20: Professional Development Experiences in Last Three Years of Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program:
Most and Least Frequently Reported Topics**



**Figure 3.21: Professional Development Topics that Would be Helpful to Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program:
Most and Least Frequently Reported Topics**



CHAPTER 4: CHALLENGES FACING EARLY CHILDHOOD DEGREE PROGRAMS, AND ADDITIONAL RESOURCES NEEDED

Challenges Facing Early Childhood Degree Programs

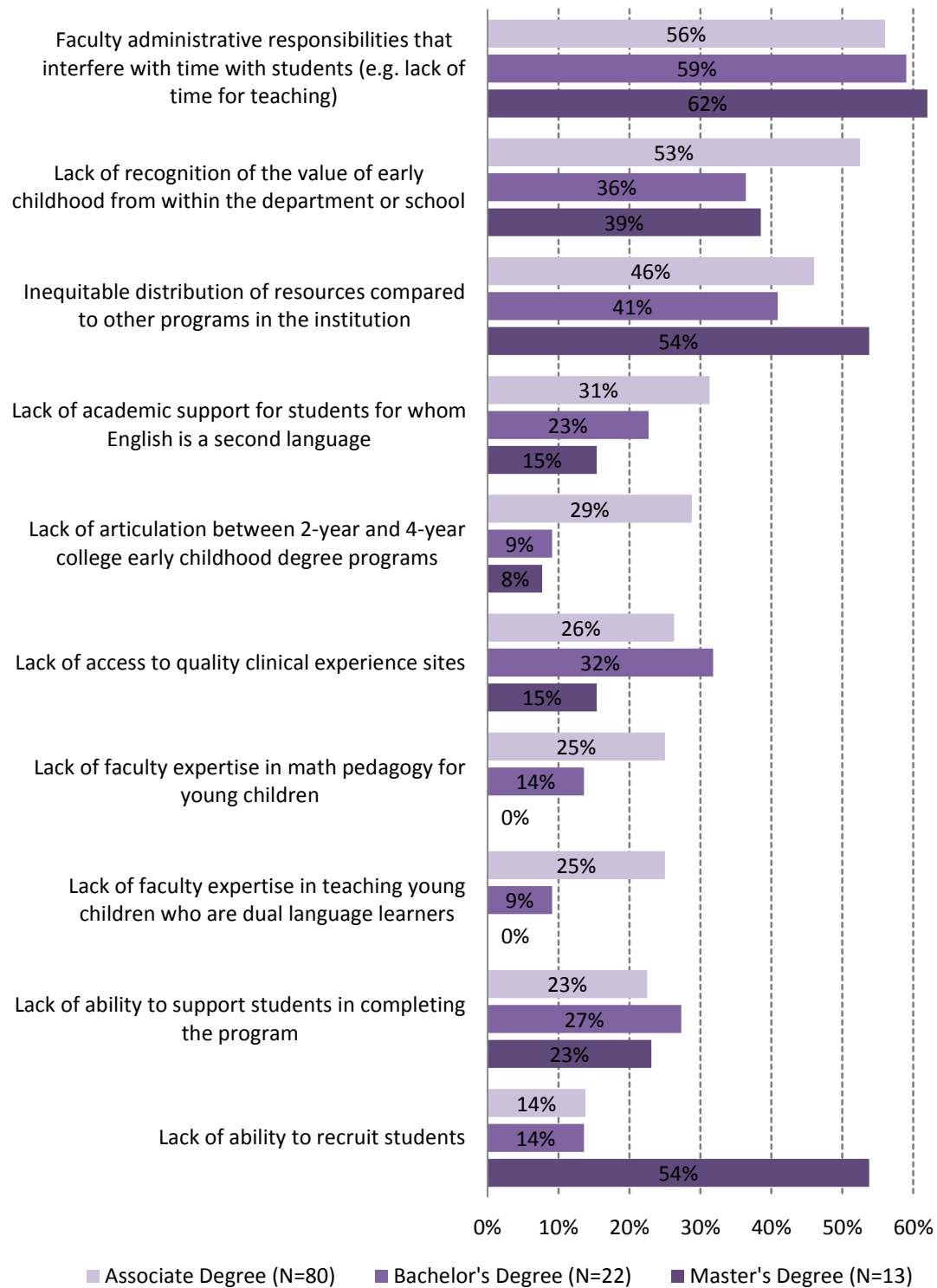
The Inventory asked deans/coordinators whether their degree programs were facing any challenges. Deans/coordinators who responded “yes” were then asked to identify the challenges from a list of 18 possible responses. (See **Figure 4.1** and **Appendix Table A4-1** for the list of challenges.)

- Approximately three-quarters of associate (73 percent) and bachelor’s (79 percent) degree programs, and 88 percent of master’s degree programs, reported facing at least one challenge.

Degree programs reporting at least one challenge:

- The three challenges most frequently reported by degree programs at all levels were:
 - ⇒ Faculty administrative responsibilities that interfere with time with students (e.g., lack of time for teaching),
 - ⇒ Lack of recognition of the value of early childhood from within the department or school, and
 - ⇒ Inequitable distribution of resources compared to other programs in the institution.
- Some of the challenges varied by levels of degree program:
 - ⇒ Master’s degree programs were much more likely to mention “lack of ability to recruit students” than were degree programs at other levels.
 - ⇒ Associate degree programs were more likely to mention:
 - * Lack of faculty expertise in teaching young children who are dual language learners,
 - * Lack of faculty expertise in math pedagogy for young children, and
 - * Lack of articulation between 2-year and 4-year college early childhood degree programs.

Figure 4.1: Challenges Facing California Early Childhood Higher Education Degree Programs, by Degree Program



Additional Resources Needed for Improving Early Childhood Degree Programs

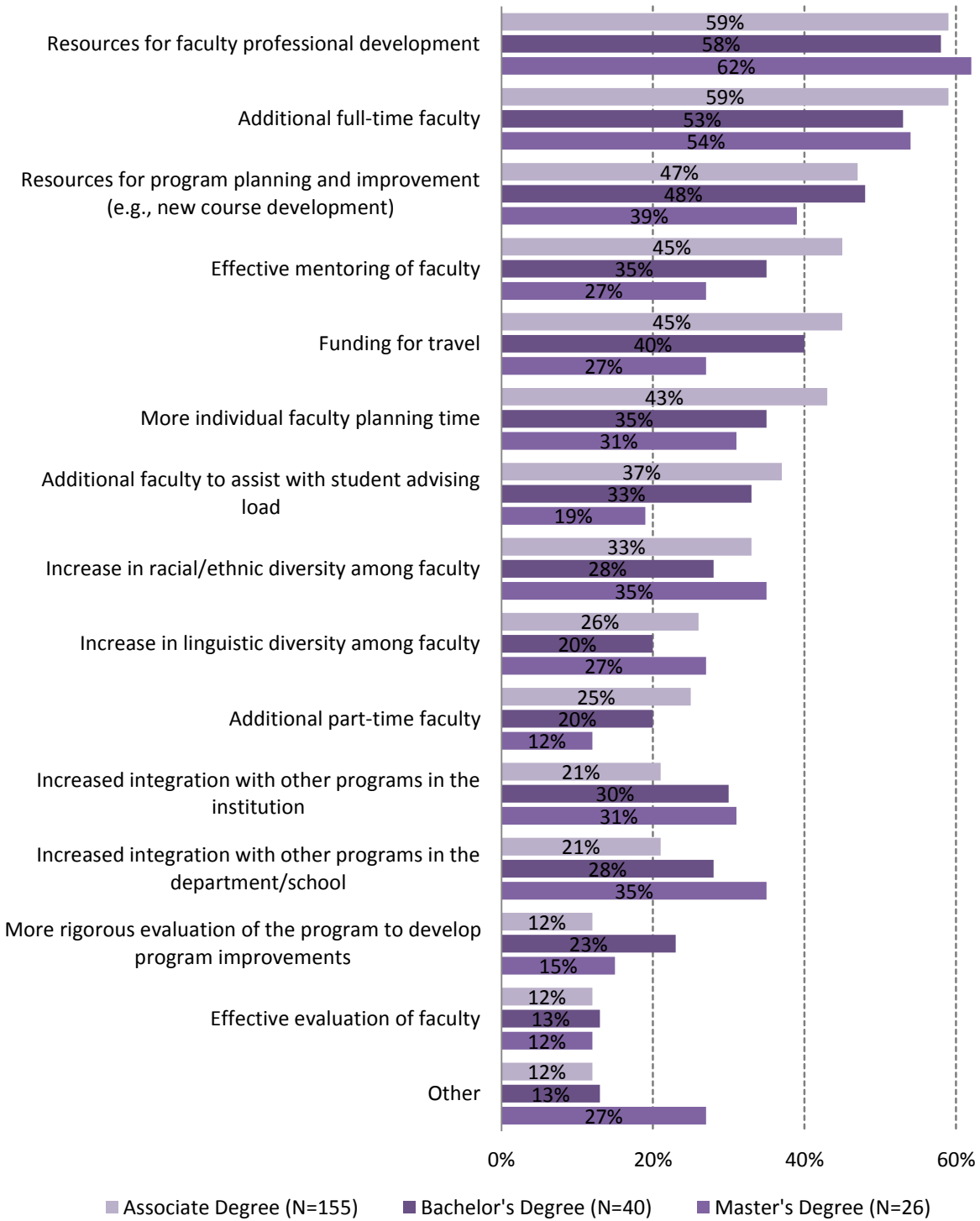
The Inventory asked faculty members whether resources were needed to improve the early childhood degree program(s) at their college or university. Faculty members who responded “yes” were then asked to identify needed resources from a list of 14 possible responses. (See **Figure 4.2** for list of resources.)

- Approximately two-thirds of associate (66 percent) and master’s (65 percent) and 58 percent of bachelor’s degree faculty members reported that additional resources were needed to improve the early childhood degree program at their college or university.

Among faculty members who reported needing at least one additional resource:

- The two most frequently mentioned resources, cited by at least one-half of faculty members at all levels, were:
 - ⇒ Additional full-time faculty, and
 - ⇒ Resources for faculty professional development.
- Although the majority of faculty members identified as White/Caucasian and English-speaking only, only a small percentage mentioned the need for resources to increase faculty diversity.
 - ⇒ Approximately one-third of associate and master’s and one-quarter of bachelor’s degree faculty members mentioned the need for an “increase in racial/ethnic diversity among faculty.”
 - ⇒ Approximately one-quarter of associate and master’s and one-fifth of bachelor’s degree faculty members mentioned the need for an “increase in linguistic diversity among faculty.”
- Some of the resources mentioned by faculty varied by program degree levels. For example:
 - ⇒ Associate degree faculty members (45 percent) were more likely to mention “effective mentoring of faculty” than were bachelor’s (35 percent) or master’s (27 percent) degree faculty members.
 - ⇒ Bachelor’s degree faculty members (23 percent) were more likely to mention “more rigorous evaluation of the program to develop program improvements” than were associate (12 percent) or master’s (15 percent) degree faculty members.
 - ⇒ Master’s degree faculty members (35 percent) were more likely to mention “increased integration with other programs in the department or school” than were associate (21 percent) or bachelor’s (28 percent) degree faculty members.

Figure 4.2: Additional Resources Needed for Improving Early Childhood Degree Programs, as Reported by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



CHAPTER 5: FAMILY ENGAGEMENT AND EARLY MATH

Importance of the Inclusion of Various Domains in Teacher Preparation Programs

The Inventory explored how faculty members viewed the importance of including the domains of family engagement and early math, relative to other domains, in higher education teacher preparation programs. Faculty members were asked to use a Likert scale of 1 to 4, with 1 meaning “not important” and 4 meaning “very important,” to indicate how important they considered it for various domains to be included in these degree programs.

The domains included:

- **Early mathematics:** Understanding the domains and sequence of mathematical knowledge in young children, and how to promote their mathematical understanding and ability to solve problems.
- **Family engagement:** Understanding and implementing an integrated strategy to engage families in ongoing and reciprocal partnerships, and the relationship of such partnerships to outcomes for children.
- **Literacy:** Understanding the components and sequence of literacy development in young children, and how to promote their skills related to oral and written language.
- **Social-emotional development:** Understanding socio-emotional development and its relationship to learning, and how to support children’s socio-emotional skills.
- **Motor development:** Understanding normal and atypical motor development in young children and its relationship to learning, and how to foster children’s motor skill development.

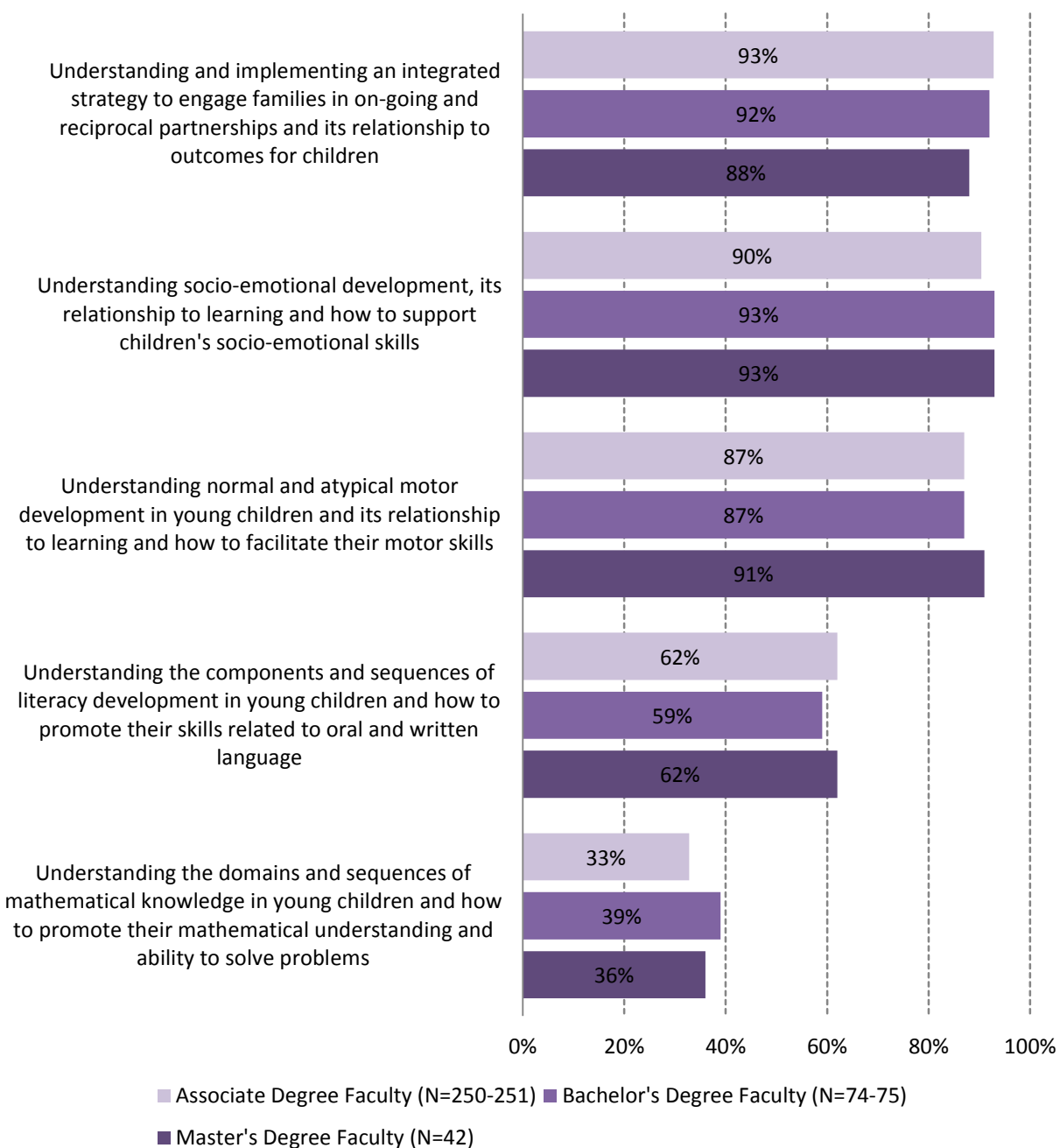
See **Figure 5.1** and **Appendix Table A4-2**.

- Faculty members at all degree levels were less likely to consider it “very important” to include the early mathematics domain than they were for other domains, including family engagement, in teacher preparation programs for practitioners working with infants and toddlers.

- ⇒ About one-third of faculty members at each degree level considered it “very important” to include the math domain for teachers of infants and toddlers.
 - ⇒ Approximately 60 percent of faculty members at each degree level considered it “very important” to include the literacy domain for teachers of infants and toddlers.
 - ⇒ More than 85 percent of faculty members at each degree level considered it “very important” to include the domains of family engagement, social-emotional development, and motor development for teachers of infants and toddlers.
- A greater percentage of faculty members at all degree levels considered it “very important” to include early mathematics in teacher preparation programs for practitioners working with preschoolers, than for those working with infants and toddlers. Differences by domain, however, followed the pattern described above.
 - ⇒ Approximately two-thirds of faculty members at all degree levels considered it “very important” to include the early mathematics domain for preschoolers.
 - ⇒ More than 80 percent of faculty members at each degree level considered the other domains, including family engagement, “very important.”
 - Eighty percent or more of faculty members at all degree levels considered it “very important” to include the early mathematics domain for teachers working with children in Transitional Kindergarten and in the early elementary grades.

***Figure 5.1** displays the proportion of faculty members who responded that it was “very important” to include a given domain in teacher preparation programs focused on infant and toddlers. **Appendix Table A4-2** displays the data for all age groups of children.*

Figure 5.1: Importance of Inclusion of Domains in Teacher Preparation Programs: Percentage of Faculty Reporting "Very Important" for Infants and Toddlers, by Degree Program



Teaching Family Engagement

The Inventory explored the content area of family engagement in depth.

The Inventory asked deans/coordinators of degree programs and the multiple subject credential programs about: 1) the family engagement topics required for the degree; and 2) the age-group focus of the required coursework. (See **Figure 5.2** and **Appendix Table A4-3**.)

The Inventory asked faculty members about the family engagement coursework they had taught in the past two years. They were then asked to specify the age-group focus of the topics covered in their coursework. (See **Figure 5.3** and **Appendix Table A4-4**.)

Required Family Engagement Course Content and Age-Group Focus (See Figure 5.2 and Appendix Table A4-3)

- Seventy percent or more of degree programs at all levels required 11 of the 13 “family engagement” topics listed in the Inventory. The two topics required by less than 70 percent were:
 - ✓ “Using knowledge about children’s families in curriculum planning” was required by 65 percent of the master’s degree programs.
 - ✓ “Utilizing technology to communicate with families” was required by 63 percent of the bachelor’s and 57 percent of the master’s degree programs.
- Three-quarters or more of multiple subject credential programs reported requiring all 13 family engagement topics.
- The age-group focus of the family engagement content area varied by topic and degree level. However, overall:
 - ⇒ Degree programs were more likely to focus the topics on preschool-age children than on children in the other age groups.
 - ⇒ Associate and bachelor’s degree programs were more likely to focus these topics on infants and toddlers than were the master’s degree programs.
 - ⇒ Associate degree programs were the least likely of degree programs to focus topics on children in Transitional Kindergarten or in the early elementary grades.
 - ⇒ Multiple subject credential programs reported focusing the topics primarily on children in the early elementary grades.

Figure 5.2 displays the percentage of degree programs that require the content area of family engagement. See **Appendix Table A4-3** for the age-group focus of the required content.



Coursework on Family Engagement Taught in the Past Two Years (See Figure 5.3 and Appendix Table A4-4)

- Two-thirds or more of faculty members at each degree level reported teaching 12 of the 13 family engagement topics included in the Inventory.
- Faculty members (at all degree levels and across age groups of children) were least likely to report having taught the family engagement topic, “utilizing technology to communicate with families.”
- The age-group focus of the family engagement content taught varied by topic and degree level. However, overall:
 - ⇒ Faculty members at all degree levels were more likely to report having taught family engagement topics with a focus on working with preschoolers than on working with infants and toddlers.
 - ⇒ Associate and master’s degree faculty members were more likely to report focusing family engagement topics on infant and toddlers than were bachelor’s degree faculty members.
 - ⇒ Associate degree faculty members were the least likely to report focusing family engagement topics on children in the early elementary grades.

*Figure .3 displays the percentages of faculty members at each degree level who reported teaching the topic within the past two years. See **Appendix Table A4-4** for the age-group focus of the content taught.*

Figure 5.3: Coursework on Family Engagement Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

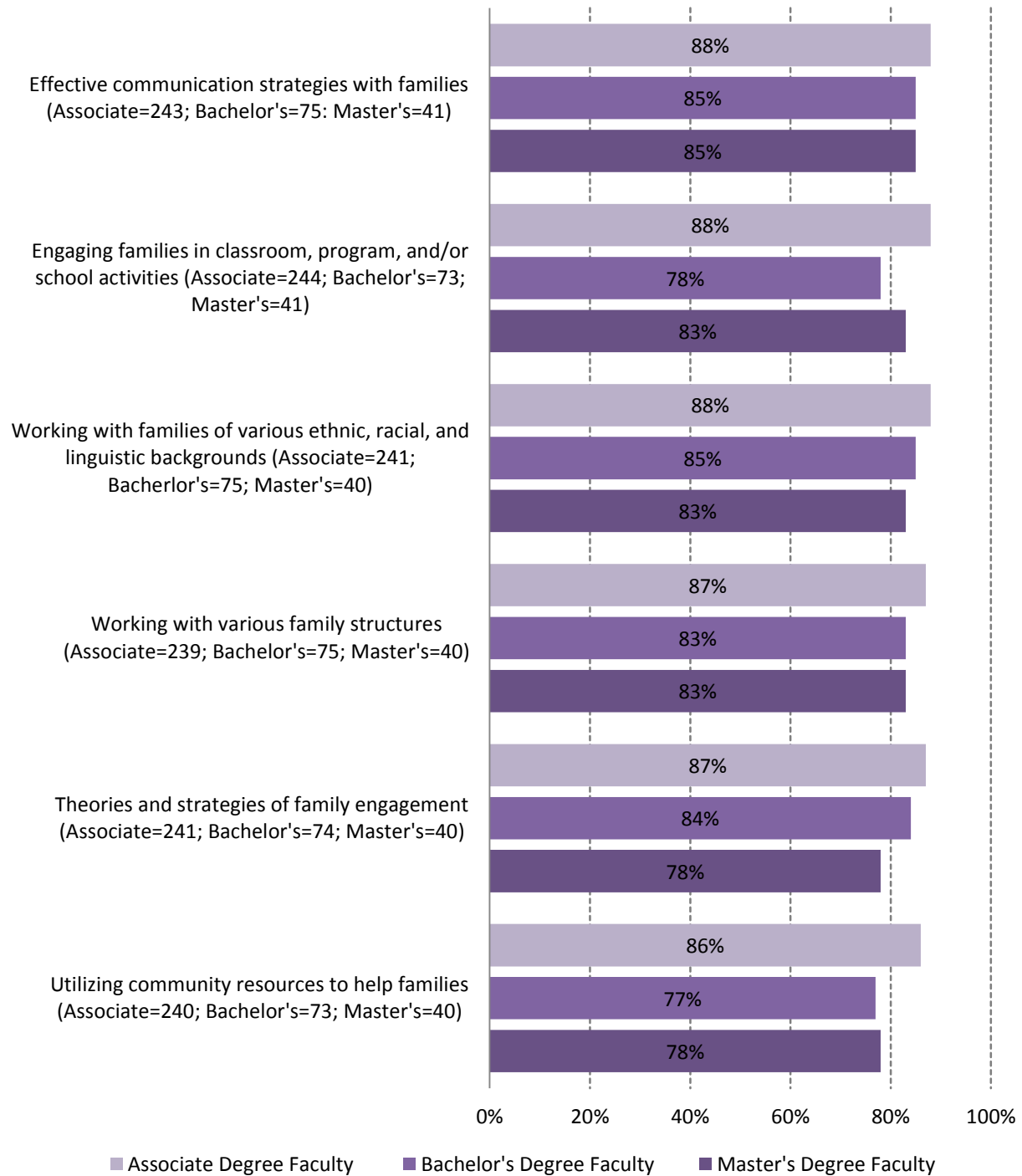
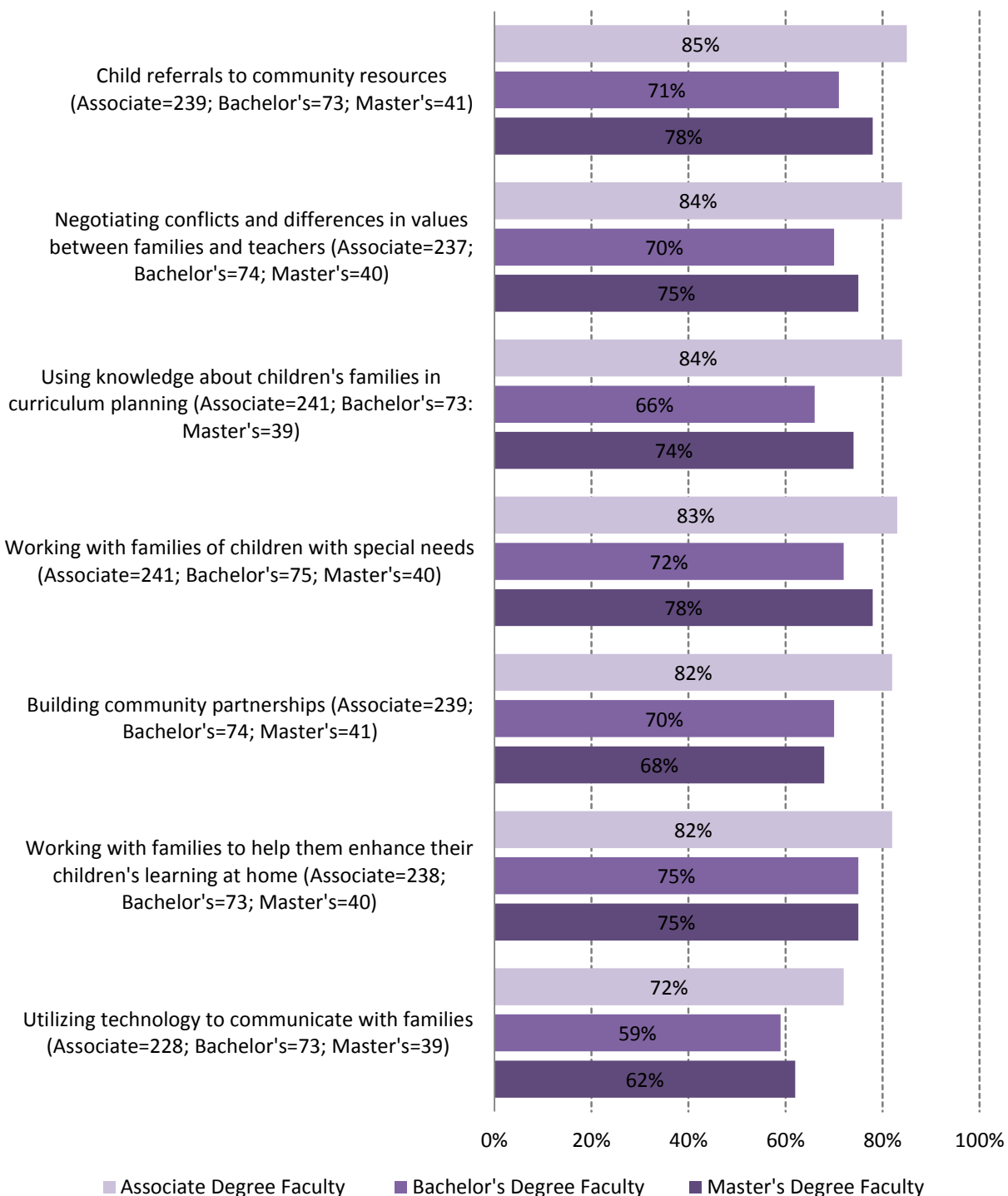


Figure 5.3: Coursework on Family Engagement Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program (continued)



Teaching Early Mathematics

The Inventory explored the early math content area in depth. This content area was divided into two subject areas, the “Development of Children’s Mathematical Understanding” and “Teaching Children Math Skills.”

The Inventory asked deans/coordinators of degree programs and multiple subject credential programs about: 1) the topics within these content areas required for the degree; and 2) the age-group focus of the required coursework. (See **Figures 5.4** and **5.5**, **Appendix Table A4-5** and **A4-6**.)

The Inventory also asked deans/coordinators about the alignment of math coursework with state and national early math standards.

In addition, the Inventory asked about the structure of math-related courses:

1. Whether math content was taught as a separate course or within child development and/or teaching and curriculum courses covering multiple topics. (See **Figure 5.6**.)
2. Whether contextualized math courses (those that relate mathematical concepts to the math that early childhood practitioners need in their profession) were offered to students, and if so, who taught such courses. (See **Figures 5.7** and **5.8**.)

The Inventory asked faculty members to assess their capacity to prepare practitioners to promote children’s mathematical understanding and to teach math skills. For each of the 13 topics (see **Figure 5.9** and **Appendix Tables A4-7** and **A4-8**), faculty members were asked to identify whether they:

1. Had limited familiarity
2. Were knowledgeable but not prepared to teach others
3. Were capable of preparing teachers working with children:
 - Birth through 2 years
 - 3 and/or 4 years (Pre-K)
 - Transitional Kindergarten
 - Grade 3 or higher

The Inventory also asked faculty members to identify the topics they had taught in the past two years in the Teaching Children Math Skills subject area. They were then asked to specify the age-group focus of the topics covered in their coursework. (See **Figure 5.10** and **Appendix Table A4-9**.)

*Development of Children’s Mathematical Understanding (See **Figure 5.4** and **Appendix Table A4-5**)*

- Eighty-five percent or more of associate degree programs reported requiring each of the five topics in the “development of children’s mathematical understanding” content area.
- Approximately three-quarters of bachelor’s degree programs required two of the five topics. Approximately 60 percent required three topics:
 - ⇒ Measurement skills for children
 - ⇒ Operations and algebraic thinking for children
 - ⇒ Geometry skills for children
- Approximately two-thirds of master’s degree programs reported requiring all five topics.
- All the multiple subject credential programs reported requiring all five topics.

Teaching Children Math Skills (See Figure 5.5 and Appendix Table A4-6)

- Eighty-five percent or more of associate degree programs reported requiring seven of the eight topics in the “teaching children math skills” content area.
 - ⇒ Seventy-nine percent required the topic “supporting English learners in developing mathematical knowledge as they concurrently acquire English.”
- Sixty percent or more of bachelor’s degree programs reported requiring seven of the eight topics in the “teaching children math skills” content area.
 - ⇒ Fifty-five percent required the topic “supporting English learners in developing mathematical knowledge as they concurrently acquire English.”
- At least two-thirds of master’s degree programs reported requiring each of the eight topics in the “teaching children math skills” content area.
- All multiple subject credential programs reported requiring the eight topics.

Age-Group Focus for Early Math

- The age-group focus of early math topics varied by topic and degree level. Overall, however:
 - ⇒ Degree programs at all levels were more likely to focus early math topics on preschool-age children than on children in the other age groups.
 - ⇒ Associate and master’s degree programs were more likely to focus topics related to “development of children’s mathematics” on infants and toddlers than were bachelor’s degree programs.
 - ⇒ The focus on infants and toddlers for the “teaching children math skills” topics was more consistent across degree programs.
 - * Two-thirds or more of degree programs at all levels reported a focus on infants and toddlers for six of the eight topics.
 - ⇒ Associate degree programs were the least likely of degree programs to focus early math topics on children in Transitional Kindergarten or in the early elementary grades.

⇒ Multiple subject credential programs reported focusing early math topics primarily on children in the early elementary grades.

*Figures 5.4 and 5.5 display the percentages of degree programs that reported requiring the topic for students to attain their degree. See **Appendix Tables A4-5** and **A4-6** for the age-group focus of each topic.*

Figure 5.4: Coursework on Development of Children's Mathematical Understanding Required by California Early Childhood Higher Education Degree and Multiple Subject Credential Programs, by Degree Program

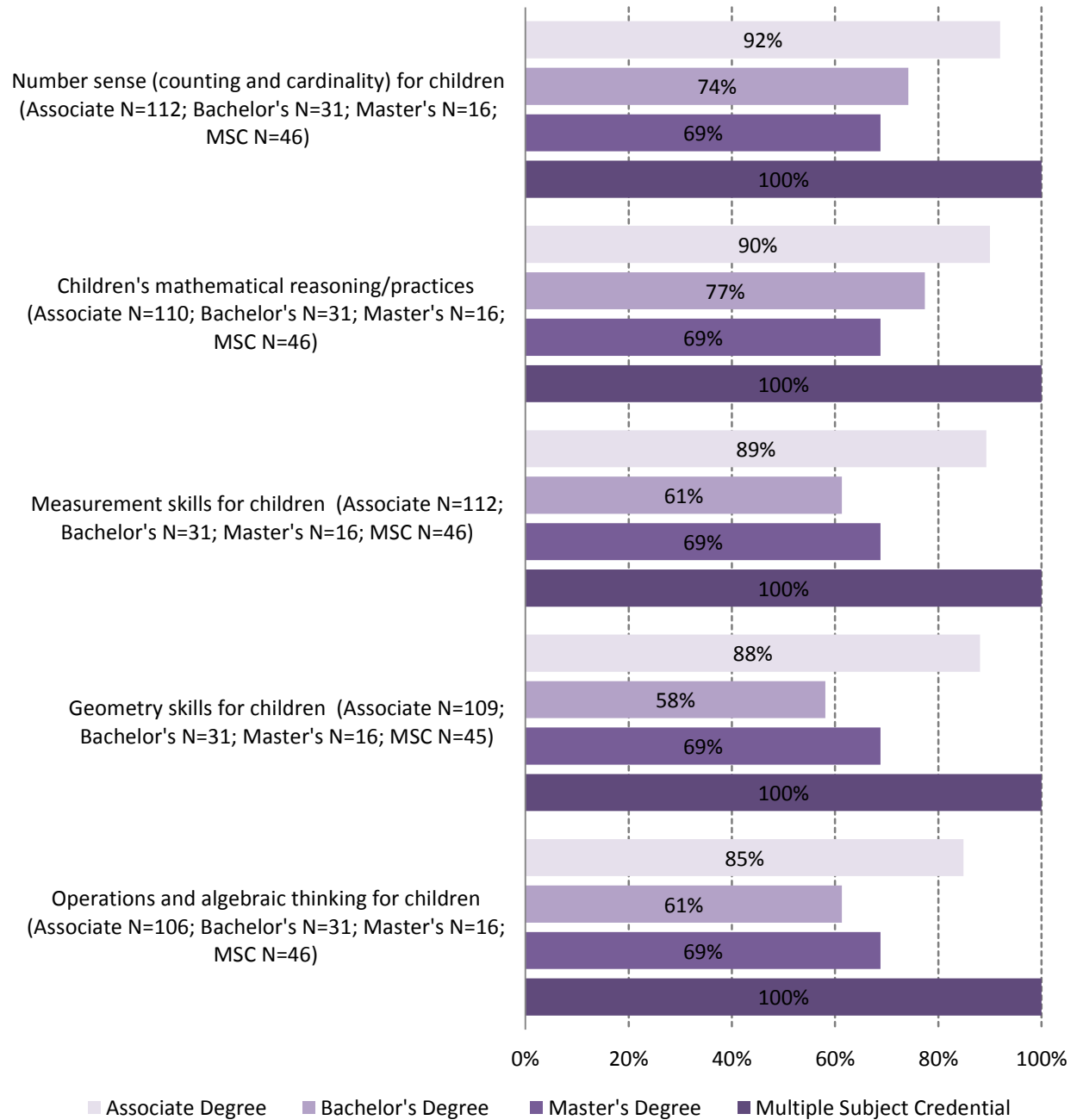
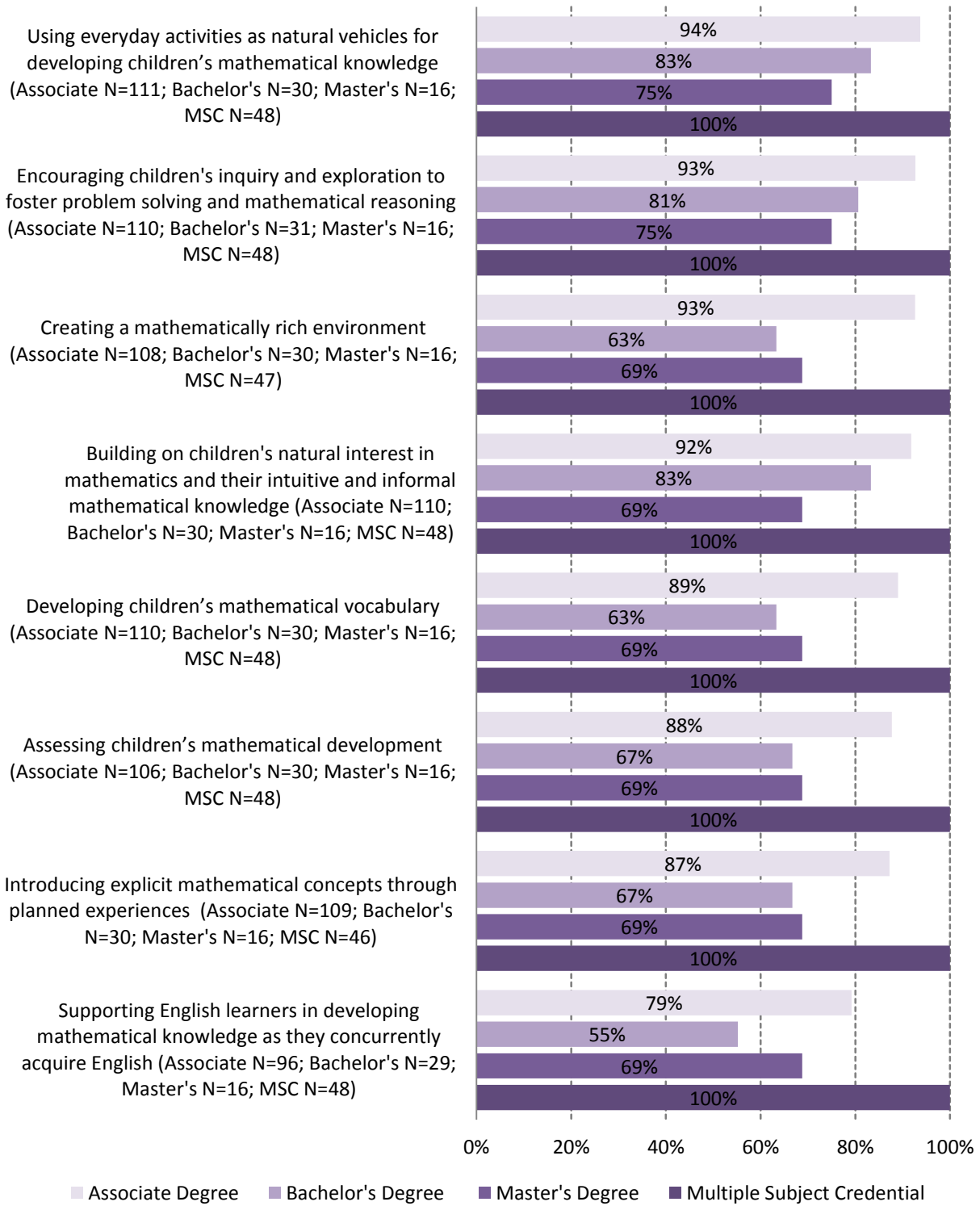


Figure 5.5: Coursework on Teaching Children Math Skills Required by California Early Childhood Higher Education Degree Programs, by Degree Program



Structure of Early Math Courses (See Figure 5.6)

- Overall, degree programs reported that math topics were taught within child development and/or teaching and curriculum courses covering multiple topics, as opposed to being taught as separate courses.
- Approximately one-half of associate degree programs, compared to approximately one-quarter of bachelor's and master's degree programs, reported that topics related to both the "development of young children's mathematical understanding" and "teaching young children math skills" were taught together in one course.
- Bachelor's degree programs (31 percent) were the most likely to offer contextualized math courses. Less than 15 percent of the associate or master's degree programs did so.

Alignment of early math coursework with state and national standards (See Figures 5.7 and 5.8)

- Slightly more than one-half of associate degree (53 percent) and bachelor's degree (56 percent) and slightly less than one-half of master's degree programs (44 percent) reported aligning their math coursework with state and national math standards.
- Degree programs at all levels were most likely to report aligning with the California Preschool Curriculum Framework and the California Preschool Learning Foundations.
- Associate degree programs were more likely than bachelor's and master's degree programs to report aligning with the California Infant/Toddler Curriculum Framework and the California Infant/Toddler Learning and Development Foundations.
- Bachelor's degree and master's degree programs were more likely than associate degree programs to report aligning with the California Common Core Content Standards for Mathematics (K-12) and the California Content Standards: Kindergarten.
- Two-thirds of multiple subject credential programs reported aligning their math coursework with state and national math standards. The three standards most frequently mentioned were:
 - ⇒ California's Common Core Content Standards for Mathematics (K-12)
 - ⇒ California Content Standards: Kindergarten

⇒ National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics

- Fewer than 20 percent of multiple subject credential programs reported aligning their math coursework with any standards related to children under five years old.

Figure 5.6: Structure of Early Math-Related Coursework in California Early Childhood Higher Education Degree Programs, by Degree Program

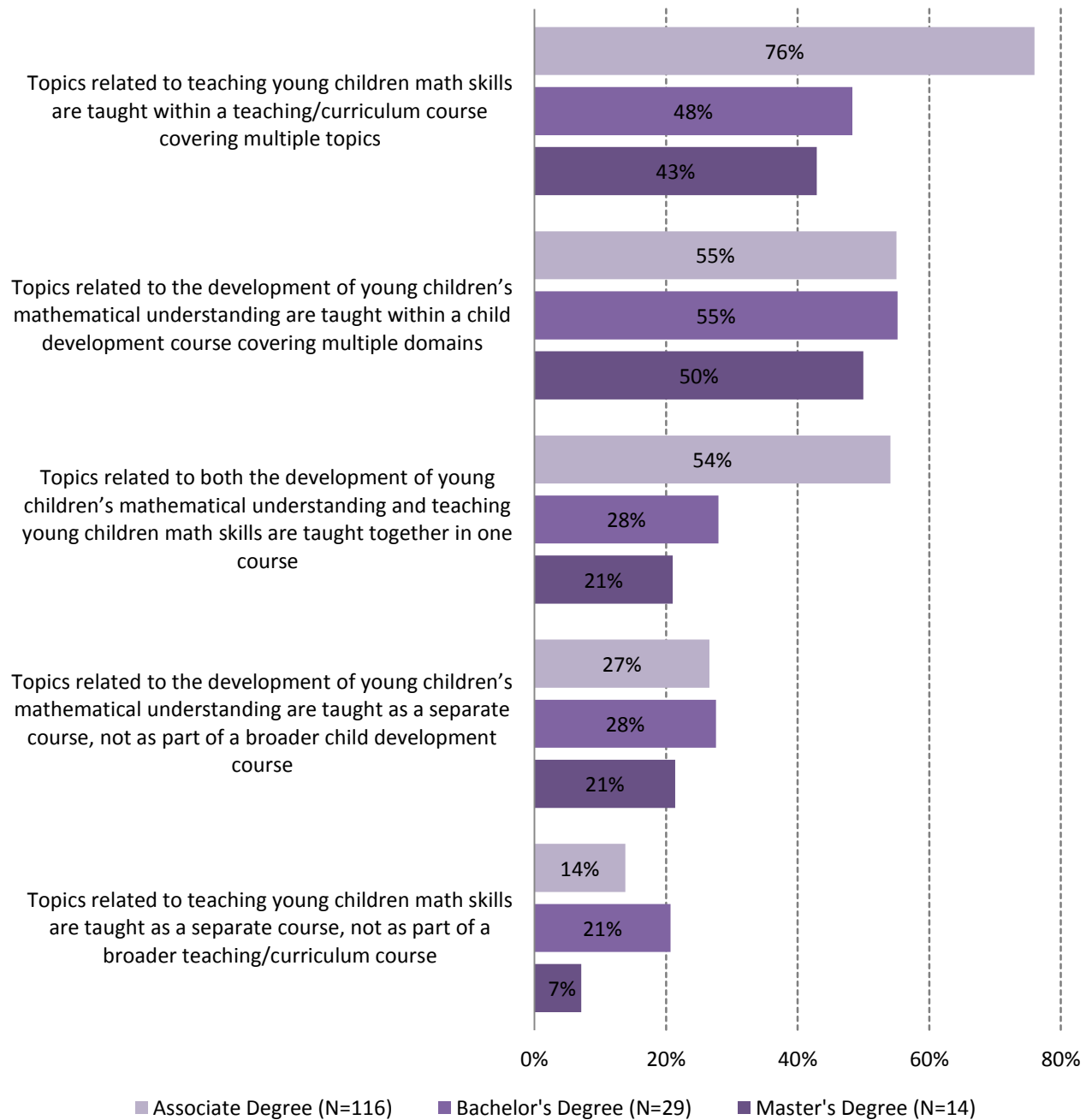


Figure 5.7: State or National Math Standards Incorporated into Early Math Course Content of California Early Childhood Higher Education Programs, by Degree Program

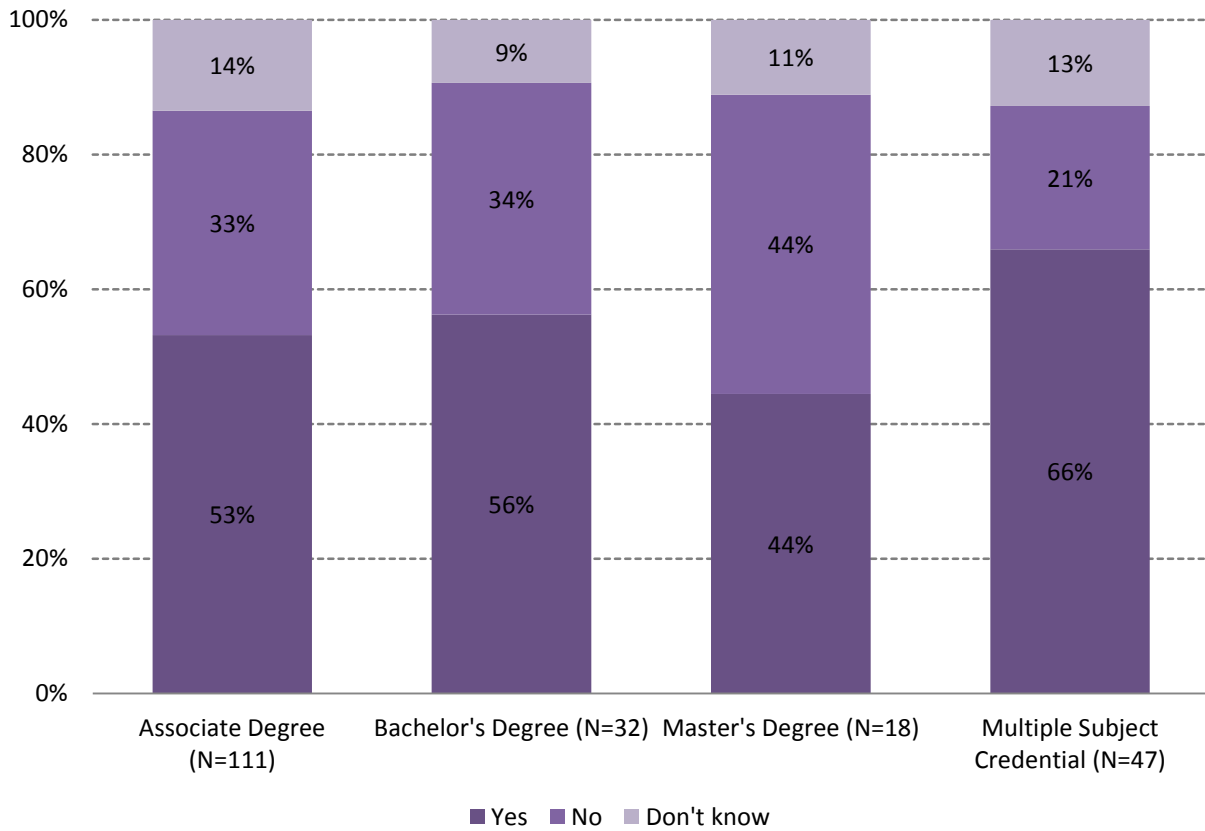
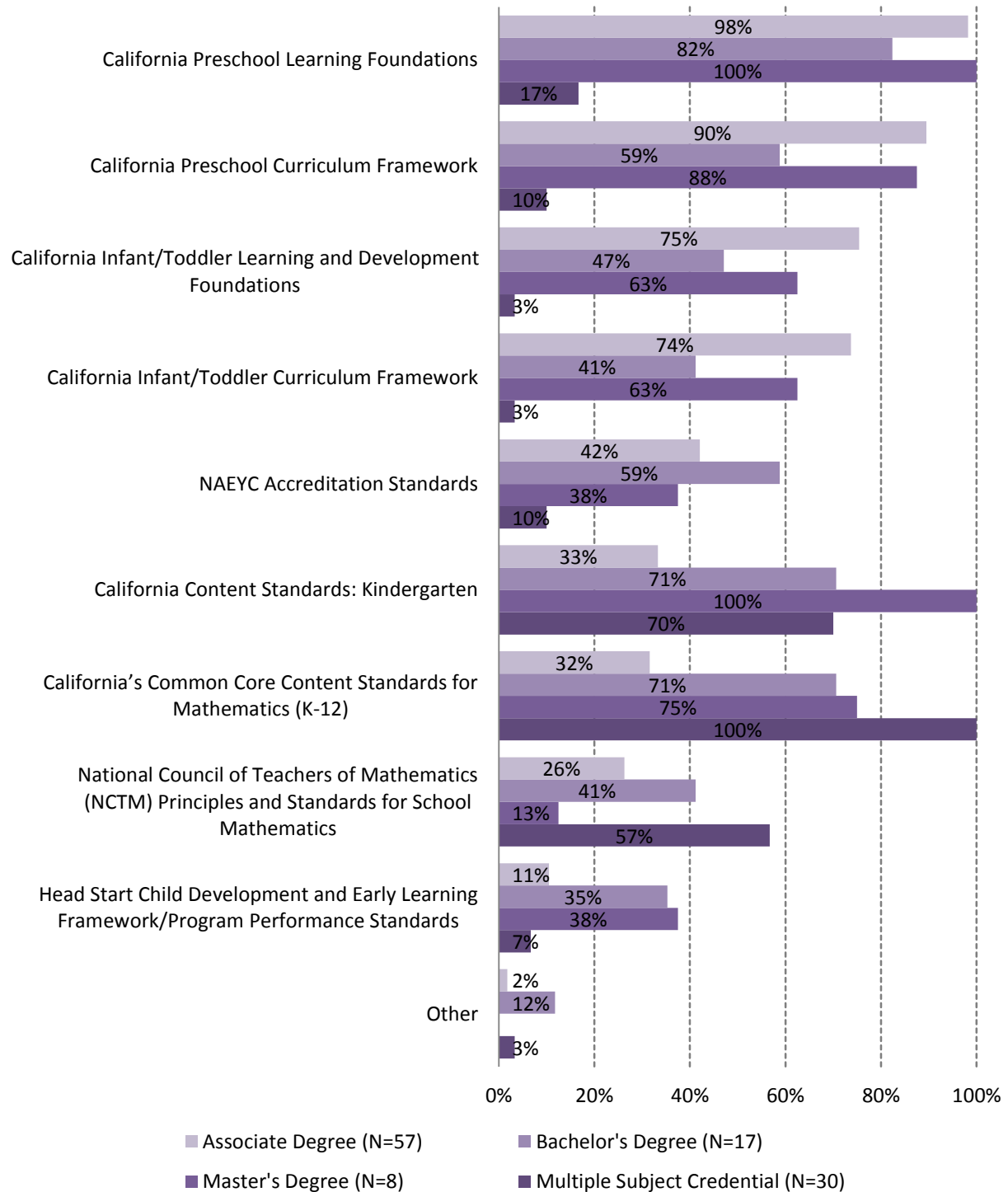


Figure 5.8: State and National Math Standards Incorporated into Early Math Course Content of California Early Childhood Higher Education Degree Programs, by Degree Program



Faculty Members' Capacity to Teach Early Mathematics (See Figures 5.9 and 5.10, and Appendix Tables A4-7 and A4-8)

- Associate degree faculty members were the most likely among faculty at all degree levels to report being capable of preparing practitioners to work with infants and toddlers around promoting mathematical understanding and teaching math skills.
 - ⇒ At least one-half of associate degree faculty members reported the capacity to teach 11 of the 13 topics listed in the Inventory.
 - ⇒ At least one-half of bachelor's degree faculty members reported the capacity to teach five of the 13 topics.
 - ⇒ At least one-half of master's degree faculty members reported the capacity to teach six of the 13 topics.
- A larger percentage of faculty members at all degree levels reported being capable of preparing practitioners to work with preschoolers than children in the other age groups.
 - ⇒ At least 60 percent of associate degree faculty members reported the capacity to teach all the topics listed in the Inventory.
 - ⇒ At least 60 percent of bachelor's degree faculty members reported the capacity to teach seven of the 13 topics.
 - ⇒ At least 60 percent of master's degree faculty members reported the capacity to teach 11 of the 13 topics.
- The two topics for which faculty members (at all degree levels and across age groups of children) were least likely to report the capacity to teach practitioners were:
 - ⇒ Supporting English learners in developing mathematical knowledge as they concurrently acquire English, and
 - ⇒ Operations and algebraic thinking for children.

Figure 5.9: Capability of Faculty to Prepare Teachers to Work with Infants and Toddlers: Children's Mathematical Understanding - Reported by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

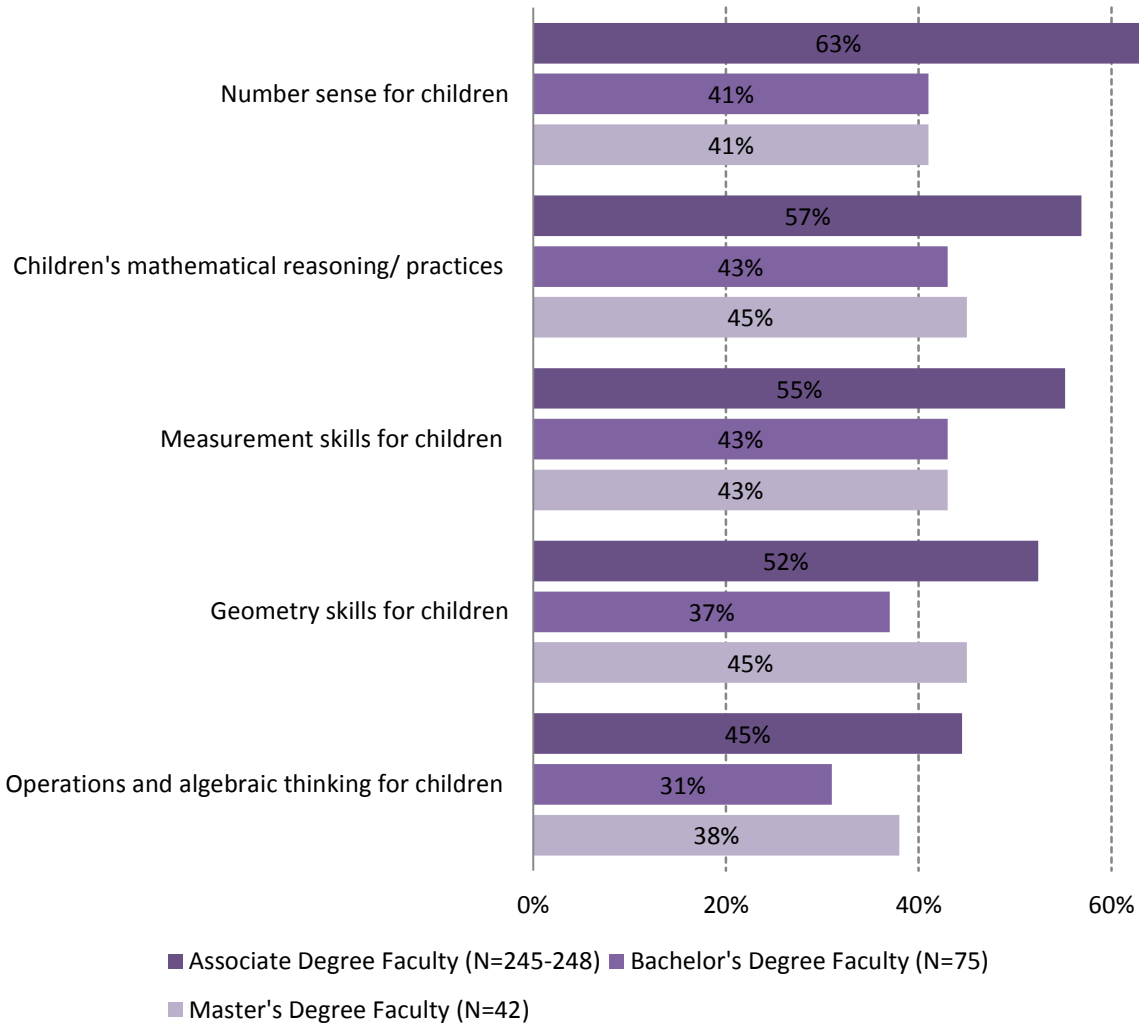
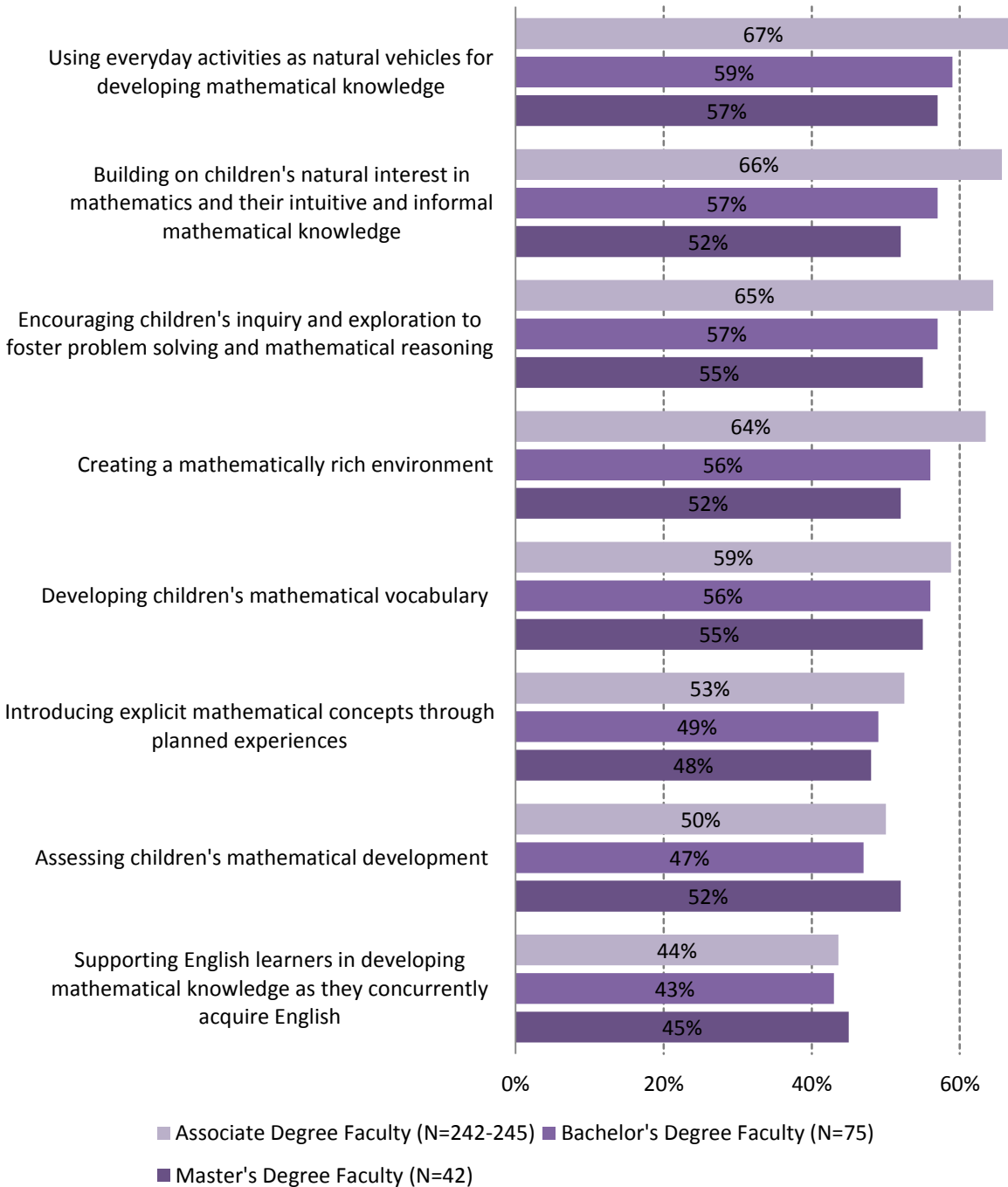


Figure 5.10: Capability of Faculty to Prepare Teachers to Work with Infants and Toddlers: Math Skills - Reported by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program

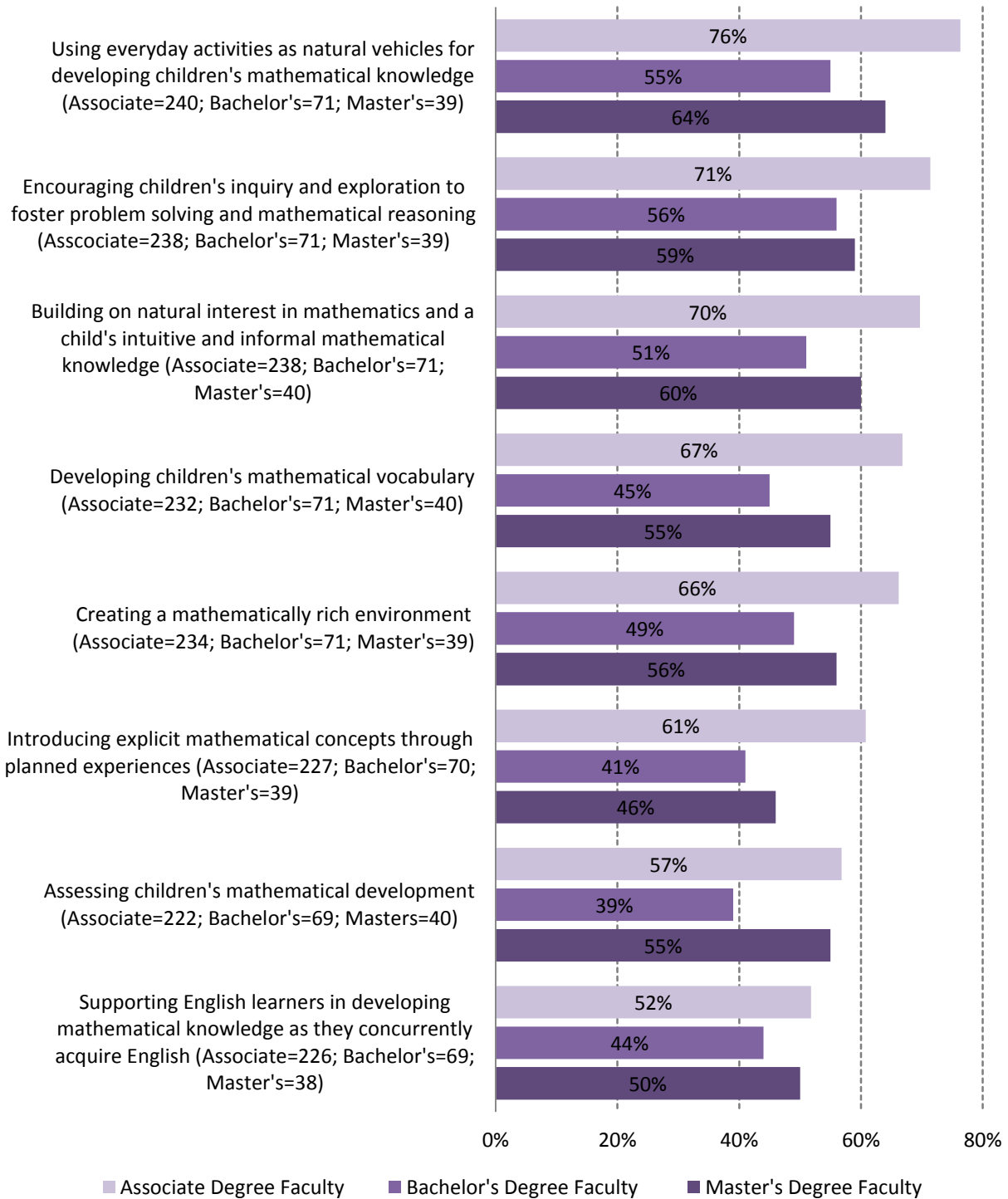


Early Mathematics Course Content Taught in the Past Two Years (See Figure 5.11 and Appendix Table A4-9)

- Associate and master's degree faculty members were more likely than bachelor's degree faculty members to report having taught early math topics during the past two years at their college or university.
 - ⇒ At least one-half of associate degree faculty members reported teaching all of the eight early math topics listed in the Inventory during the past two years at their college or university.
 - ⇒ At least one-half of bachelor's degree faculty members reported teaching three of the eight topics.
 - ⇒ At least one-half of master's degree faculty members reported teaching seven of the eight topics.
- Faculty members (at all degree levels and across age groups of children) were least likely to report having taught the math topic, "supporting English learners in developing mathematical knowledge as they concurrently acquire English."
- Overall, faculty members at all degree levels were more likely to report having taught math topics with a focus on working with preschoolers than on working with children in both older and younger age groups.
- Faculty members at all degree levels were also more likely to report having taught math topics with a focus on working with children in Transitional Kindergarten than with children in the early elementary grades.
- Associate degree faculty members were the most likely to report focusing on math-related topics for infants and toddlers, and the least likely to report focusing on such content for children in the early elementary grades.

*Figure 5.11 displays the percentages of faculty members at each degree level who reported teaching a given topic within the past two years. See **Appendix Table A4-9** for the age-group focus of the content taught.*

Figure 5.11: Coursework on Teaching Math Skills Taught by Faculty Participating in the California Early Childhood Higher Education Inventory, by Degree Program



Level of Interest in Professional Development Topics Related to Early Math and Family Engagement

In addition to the professional development questions discussed in Chapter 3, the Inventory asked more specifically about faculty members' interest in professional development related to early mathematics and family engagement. Using a Likert scale of 1 to 4, with 1 being "least interested" and 4 being "most interested," faculty members were asked to rate how interested they would be in nine topics related to early mathematics and 12 topics related to family engagement.

(See **Figures 5.12** and **5.13** and **Appendix Tables A4-10** and **A4-11**.)

- When asked to rate their interest among a list of math-related topics for professional development, at least 30 percent of faculty members at each degree level reported that they would be "most interested" in four topics:
 - ⇒ Creating a mathematically rich learning environment,
 - ⇒ Integrating mathematical understanding into children's daily activities,
 - ⇒ Integrating mathematical understanding and skills into all aspects of curriculum, and
 - ⇒ Assessing children's mathematical understanding.
- Larger percentages of faculty members at each degree level reported being "most interested" in family engagement topics than in early math topics. Approximately 40 percent of faculty members at each degree level reported being "most interested" in four topics:
 - ⇒ Strategies to interact with linguistically, economically, and culturally diverse families,
 - ⇒ Negotiating conflict with families,
 - ⇒ Working with families to extend children's learning at home, and
 - ⇒ Using community resources to support families.

Figure 5.12 displays the percentage of faculty members at all degree levels who reported that they would be "most interested" in an early math-related professional development opportunity. **Appendix Table A4-10** displays the responses for all interest levels.

Figure 5.13 displays the percentage of faculty members at all degree levels who reported that they would be "most interested" in a family engagement-related professional development opportunity. **Appendix Table A4-11** displays the responses for all interest levels.

Figure 5.12: Level of Interest in Early-Math Professional Development Reported by Faculty Participating in the California Early Childhood Higher Education Inventory: Percentage Reporting "Most Interested," by Degree Program

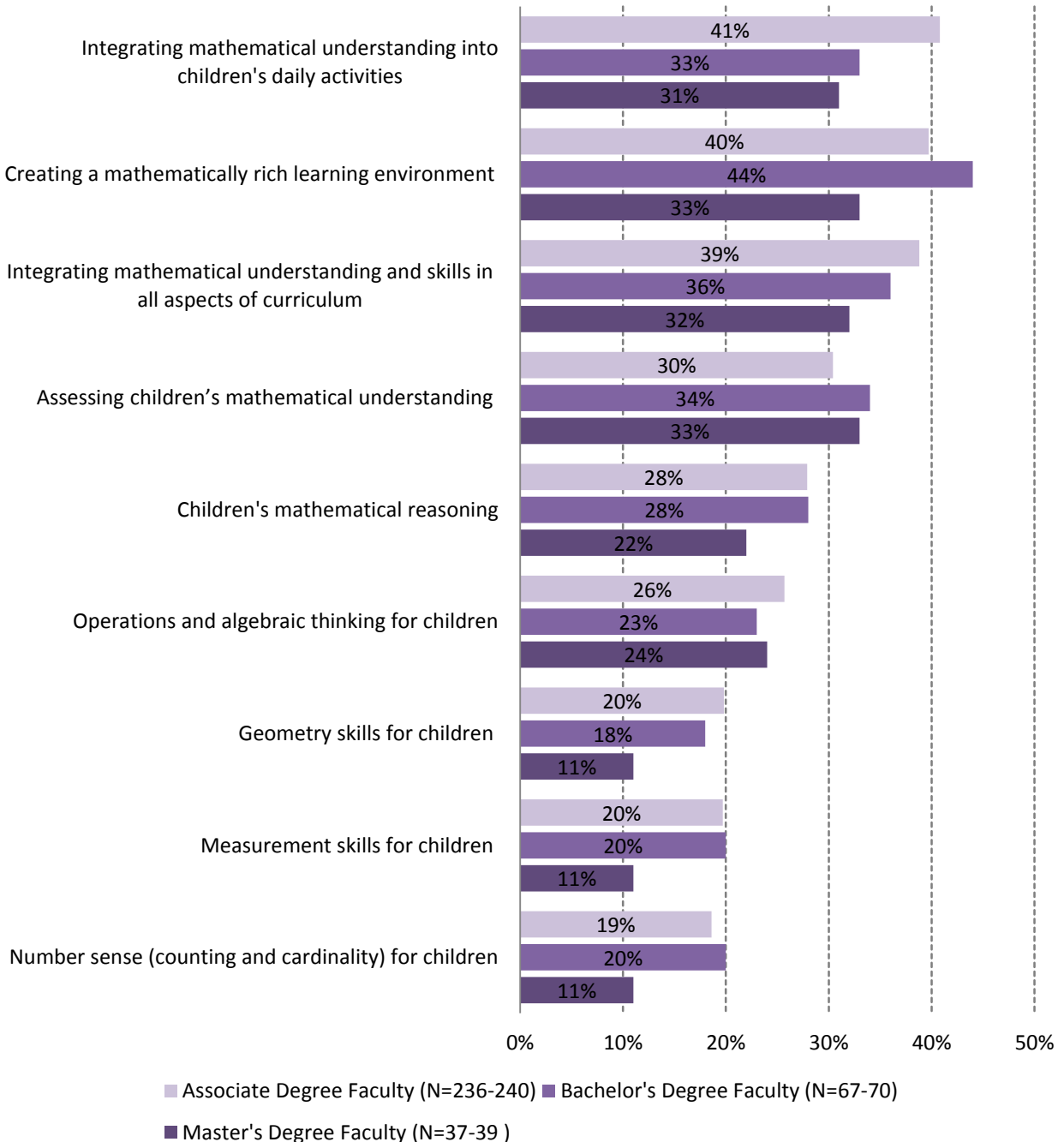
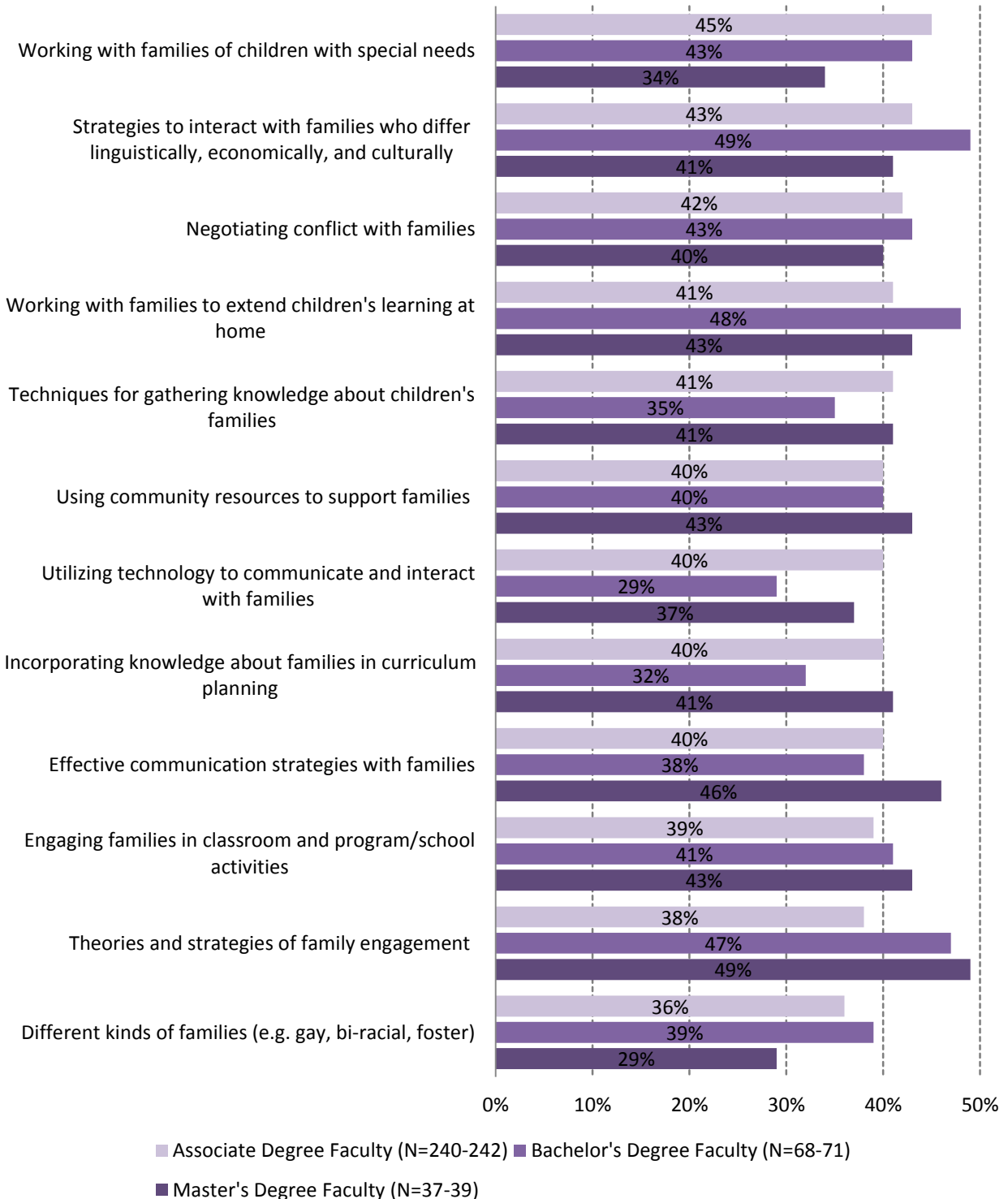


Figure 5.13: Level of Interest in Family Engagement Professional Development Reported by Faculty Participating in the California Early Childhood Higher Education Inventory: Percentage Reporting "Most Interested," by Degree Program



APPENDIX

Appendix 1: Introduction

Table A1-1. Early Childhood Associate Degree Programs in California

Name of Institution	Associate Degree Program(s)
Allan Hancock College	A.S. Early Childhood Studies, General A.S. Early Childhood Studies- Preschool Infant-Toddler Program A.S. Early Childhood Studies, Elementary Education A.S. Early Childhood Studies, Elementary Education with Bilingual/Bicultural Emphasis A.S. Early Childhood Studies, Special Education
American River College	A.A. Early Childhood Education A.S.-T Early Childhood Education
Antelope Valley College	A.A. Child and Family Education A.S. Child and Family Education
Bakersfield College	A.S. Child Development and Family Relations
Barstow College	A.S. Child Development
Butte College	A.S. Early Childhood Education A.S.-T Early Childhood Education A.S.-T Child Development
Cabrillo College	A.S. Early Childhood Education
Cañada College	A.S. Early Childhood Education: Child Development A.S.-T Early Childhood Education: Child Development CSU A.S.-T Early Childhood Education: Child Development UC
Cerritos College	A.A. Child Development
Cerro Coso Community College	A.A. Child Development
Chabot College	A.A. Early Childhood Development A.A. Early Childhood Intervention A.S.-T Early Childhood Development
Chaffey College	A.S. Child Development
Citrus College	A.A. Child Development A.S.-T Early Childhood Education
City College of San Francisco	A.S.-T Child Development
College of the Canyons	A.S. Early Childhood Education
College of the Desert	A.A. Early Childhood Education
College of Marin	A.S. Early Childhood Education
College of the	A.S. Early Childhood Education

Redwoods	A.S.-T Early Childhood Education
College of the Sequoias	A.S. Child Development
College of the Siskiyous	A.S. Early Childhood Education A.S.-T Early Childhood Education
Columbia College	A.S. Child Development A.S.-T Early Childhood Education
Compton Community College	A.A. Early Childhood Education
Contra Costa College	A.S. Montessori Education Preschool Teacher A.S. Early Childhood Education
Copper Mountain College	A.A. Child Development
Cosumnes River College	A.A. Early Childhood Education A.A. Early Childhood Education - Site Supervisor
Crafton Hills College	A.A. Child Development
Cuesta College	A.A. Early Childhood Education Teacher A.A.-T Early Childhood Education Teacher
Cuyamaca College	A.S. Child Development: Infant/Toddler Specialization or Preschool Specialization
De Anza College	A.A. Child Development A.S.-T Child Development
Diablo Valley College	A.S. Early Childhood Education
East Los Angeles College	A.A. Child Development
El Camino College	A.A. Childhood Education (no practicum, curriculum classes)
Feather River College	A.A. Early Childhood Education A.S.-T Early Childhood Education
Folsom Lake College	A.A. Early Childhood Education A.A. Early Childhood Education - Site Supervisor
Foothill College	A.A. Child Development
Fresno City College	A.S. Child Development A.S. Early Intervention A.S.-T Early Childhood
Fullerton College	A.A. Early Childhood Education A.A. Child Development and Education
Gavilan College	A.A. Child Development A.A. Liberal Studies with an Emphasis in Elementary Education
Glendale Community College	A.S. Early Childhood Education
Grossmont College	A.S. Child Development A.S.-T Child Development
Hartnell College	A.S. Early Childhood Education A.S.-T Early Childhood Education
Imperial Valley College	A.S.-T Early Childhood Education A.S. Child Development
Irvine Valley College	A.S. Early Childhood Education
Lake Tahoe Community College	A.A. Early Childhood Education
Las Positas College	A.A. Early Childhood Development A.A. Early Childhood Intervention A.S.-T Early Childhood Education

Lassen Community College	A.A. Child Development A.S.-T Early Childhood Education
Long Beach City College	A.A. Early Childhood Education A.S.-T Early Childhood Education
Los Angeles City College	A.A. Child Development A.S.-T Early Childhood Education
Los Angeles Harbor College	A.S. Child Development
Los Angeles Mission College	A.A. Child Development & Early Childhood Education Model Transfer Degree
Los Angeles Pierce College	A.A. Child Development A.A.-T Child Development
Los Angeles Southwest	A.A. Child Development
Los Angeles Trade-Technical College	A.A. Child Development A.A.-T Child Development A.S.-T Early Childhood Education
Los Angeles Valley College	A.A. Child Development A.A.-T Child Development (Early Childhood Education) A.A.-T Child Development (Special Education)
Los Medanos College	A.S.-T Early Childhood Education
Mendocino College	A.S. Child Development/Family Relations
Merced College	A.A. Child Development
Merritt College	A.A. Child Development
Mira Costa College	A.A. Child Development - Associate Teacher A.A. Child Development - Teacher A.A. Child Development - Master Teacher A.A. Child Development - Site Supervisor
Mission College	A.S. Early Childhood Education A.S.-T Early Childhood Education
Modesto Junior College	A.S. Child Development
Monterey Peninsula College	A.S. Early Childhood Education A.S.-T Early Childhood Education
Moorpark College	A.S. Child Development A.S.-T Early Childhood Education
Moreno Valley College	A.S. Early Childhood Education
Mt. San Antonio College	A.S. Child Development
Mt. San Jacinto College	A.S. Child Development and Education A.S.-T Early Childhood Education A.S. Early Intervention and Inclusion
Napa Valley College	A.S. Child and Family Studies A.S.-T Child and Family Studies
Norco College	A.A. Early Childhood Education A.A. Early Intervention Assistant A.S.-T Early Childhood Education A.A. Social and Behavioral Sciences, ECE area of emphasis
Ohlone College	A.A. Early Childhood Studies
Orange Coast College	A.A.-T Early Childhood Education
Oxnard College	A.S. Child Development

Palomar College	A.S. Child Development - Preschool Teacher A.S. Child Development - Infant Toddler Teacher A.S. Child Development - Early Inclusion Teacher A.S. Child Development - Early Childhood Administration A.S.-T Child Development - Early Childhood Administration
Pasadena City College	A.S.-T Child Development
Porterville College	A.A. Child Development
Reedley College	A.S. Child Development A.S.-T Child Development
Rio Hondo College	A.S. Child Development A.S.-T Early Childhood Education
Riverside Community College	A.S. Early Childhood Education A.S. Early Childhood Intervention Assistant A.S.-T Early Childhood Education
Sacramento City College	A.A. Child Development A.A. Early Childhood Education Administration A.A. Early Childhood Education Teacher
Saddleback College	A.S. Child Development A.S.-T Child Development
San Bernardino Valley College	A.A. Child Development A.A. Child Development Site Supervisor A.S.-T Early Childhood Education
San Diego City College	A.S. Child Development A.S. Child Development - Site Supervisor
San Diego Mesa College	A.S. Child Development
San Diego Miramar College	A.A. Human Development Studies A.S. Child Development A.S. Child Development - Site Supervisor
San Joaquin Delta College	A.A. Early Childhood Education A.S.-T Early Childhood Education
San Jose City College	A.S. Early Childhood Education
Santa Ana (Rancho) College	A.A. Human Development (Infant/toddler; Preschool School-age) A.S.-T Early Childhood Education
Santa Barbara City College	A.S. Early Childhood Education
Santa Monica College	A.A. Early Childhood Intervention Assistant A.A. Early Childhood Intervention Teacher A.S. Early Childhood A.S.-T Early Childhood
Santa Rosa Junior College	A.A. Child Development A.S.-T Early Childhood Education
Shasta College	A.S. Early Childhood Education A.S.-T Early Childhood Education
Sierra College	A.S. Early Childhood Education A.S. Early Childhood Education: Master Teacher A.S. Early Childhood Education: Site supervisor A.S.-T Early Childhood Education
Skyline College	A.S. Early Childhood Education A.S.-T Early Childhood Education
Solano Community College	A.S. Early Childhood Education A.S.-T Early Childhood Education

Southwestern College	A.A./Transfer Preparation: Child Development A.A. Career/Technical: Child Development Teacher
Taft College	A.S. Early Childhood Education
Ventura College	A.S. Child Development A.S.-T. Child Development
Victor Valley College	A.S. Child Development A.S.-T Child Development
West Hills College - Coalinga	A.A. Child Development A.S. Child Development
West Hills College - Lemoore	A.A. Child Development A.S. Child Development
West Los Angeles College	A.A. Child Development
West Valley College	A.S. Early Childhood Education
Woodland College	A.S. Early Childhood Education
Yuba College	A.S. Early Childhood Education

Table A1-2. Early Childhood Bachelor's and Graduate Degree Programs in California

Name of Institution	Bachelor's Degree Program(s)	Graduate Degree Program(s)
Alliant International University	B.A. Child Development	
Ashford University	B.A. Child Development B.A. Early Childhood Education Administration B.A. Early Childhood Education	
Biola University	B.A. Liberal Studies, Elementary Education	M.A. Education, Concentration in Early Childhood
Brandman University	B.A. Early Childhood Education	M.A. Education, Leadership in Early Childhood Education
California Baptist University	B.A. Early Childhood Studies (School of Education) B.A. Early Childhood Studies (School of Online Professional Services)	
Cambridge College	B.S. Multidisciplinary Degree Concentration in Early Education and Care	M.Ed. Concentration Early Education and Child Care
CSU Bakersfield	B.A. Child, Adolescent, and Family Studies	
CSU Channel Islands	B.A. Early Childhood Studies	
CSU Chico	B.A. Child Development	
CSU Dominguez Hills	B.S. Child Development	M.A. Special Education: Early Childhood Option
CSU East Bay		M.S. Early Childhood Education
CSU Fresno	B.S. Child Development Pre-Credential Option B.S. Child Development Option	M.A. Early Childhood Education
CSU Fullerton	B.S. Child and Adolescent Development	
CSU Long Beach	B.A. Family and Consumer Sciences: Option in Child Development and Family Studies	M.A. Early Childhood Education
CSU Los Angeles	B.A. Child Development	M.A. Child Development M.A. Early Childhood/Primary Education
CSU Northridge	B.A. Child and Adolescent Development B.A. Early Childhood Development B.S. Family and Consumer Sciences Education	M.A. Early Childhood Education M.S. Family and Consumer Sciences M.A. Educational Psychology, Emphasis in Early Childhood Education
CSU Sacramento	B.A. Child Development	M.A. Child Development
CSU San Bernardino	B.A. Human Development	M.A. Child Development
CSU San Luis Obispo	B.S. Child Development	
CSU Stanislaus	B.A. Child Development	
Fresno Pacific University	B.A. Early Childhood Development (On-site and Distance Education)	M.A. Curriculum and Instruction, Emphasis in Early Child Development
Hope International University	B.A. Liberal Studies: Teacher Preparation, Concentration in Early Childhood	

Humboldt State University	B.A. Liberal Studies, Emphasis in Child Development	
Humphreys College	B.A. Early Childhood Education	M.A. Education, Emphasis in Early Childhood Education
Loyola Marymount University		M.A. Early Childhood Education
The Master's College and Seminary	B.S. Home Economics, Family and Consumer Sciences: Early Childhood Education Emphasis	
Mills College	B.A. Child Development	M.A. Leadership in Early Childhood M.A. Education, Emphasis in Early Childhood Education Ed.D. Educational Leadership, Early Childhood option
Mount St. Mary's College	B.A. in Child Development	
National Hispanic University	B.A. in Child Development	M.A. Teaching, Early Childhood Specialization
National University	B.A. Early Childhood Education B.A. Early Childhood Development (Multiple Subject Credential)	M.A. Teaching, Early Childhood Specialization
Pacific Oaks College	B.A. Human Development B.A. Early Childhood Education	M.A. Early Childhood Education and with Preliminary Multiple Subject Credential
Pacific Union College	B.S. Early Childhood Education	
Point Loma Nazarene University	B.A. Child and Adolescent Development	
San Diego State University	B.S. Child Development	M.A. Child Development
San Francisco State University	B.A. Child and Adolescent Development B.A. Family and Consumer Sciences	M.A. Early Childhood Education M.A. Family and Consumer Sciences
San Jose State University	B.A. Child and Adolescent Development B.A. Child and Adolescent Development, Preparation for Teaching	M.A. Child and Adolescent Development
Sonoma State University	B.A. Early Childhood Studies B.A. Human Development	M.A. Early Childhood Education
St. Mary's College of California		M.A. Early Childhood Education
University of California, Davis	B.S. Human Development	
University of La Verne	B.S. Child Development	M.S. Child Development
Vanguard University of Southern California	B.A. Early Childhood Education	
Whittier College	B.A. Child Development	

Appendix 2: Early Childhood Higher Education Programs: Detailed Tables

Table A2-1. Required Coursework Related to Child Development and Learning: Age-Group Focus, by Degree Program

Age Group	Associate Degree	Bachelor's Degree	Master's Degree	MSC Program
<u>Knowledge about children's development in different domains (e.g., language development, cognitive development)</u>				
Birth to two years	93%	97%	71%	N/A
3 and/or 4 years (Pre-K)	97%	97%	94%	56%
Transitional Kindergarten	72%	91%	94%	69%
K-grade 3 or higher	79%	97%	82%	98%
N	114	34	17	48
<u>Development of children's early literacy skills</u>				
Birth to two years	85%	94%	69%	N/A
3 and/or 4 years (Pre-K)	97%	97%	92%	42%
Transitional Kindergarten	67%	94%	92%	56%
K-grade 3 or higher	43%	97%	85%	98%
N	107	32	13	48
<u>Development of children's scientific understandings</u>				
Birth to two years	79%	84%	55%	N/A
3 and/or 4 years (Pre-K)	97%	94%	91%	18%
Transitional Kindergarten	67%	90%	82%	40%
K-grade 3 or higher	48%	90%	82%	100%
N	107	31	11	48
<u>Understanding the effects of culture, gender, class, and race on child development</u>				
Birth to two years	90%	91%	77%	N/A
3 and/or 4 years (Pre-K)	97%	97%	94%	48%
Transitional Kindergarten	73%	91%	94%	63%
K-grade 3 or higher	71%	94%	77%	98%
N	115	35	17	48

Table A2-1. Required Coursework Related to Child Development and Learning: Age-Group Focus, by Degree Program (Continued)

Age Group	Associate Degree	Bachelor's Degree	Master's Degree	MSC Program
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<i>Child development theory and its relationship to teaching</i>				
Birth to two years	90%	97%	80%	N/A
3 and/or 4 years (Pre-K)	97%	97%	100%	49%
Transitional Kindergarten	73%	94%	100%	62%
K-grade 3 or higher	66%	91%	80%	98%
N	114	32	15	48
<i>Understanding the effects of disability on child development</i>				
Birth to two years	91%	97%	69%	N/A
3 and/or 4 years (Pre-K)	96%	97%	94%	46%
Transitional Kindergarten	66%	97%	94%	59%
K-grade 3 or higher	61%	93%	75%	98%
N	107	30	16	48

Table A2-2: Required Coursework Related to Teaching Diverse Child Populations: Age-Group Focus, by Degree Program

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
<u>Teaching children who are experiencing poverty</u>			
Birth to two years	92%	86%	85%
3 and/or 4 years (Pre-K)	96%	90%	100%
Transitional Kindergarten	70%	86%	100%
K-grade 3 or higher	70%	97%	85%
N	112	29	13
<u>Teaching children with challenging behaviors</u>			
Birth to two years	89%	83%	75%
3 and/or 4 years (Pre-K)	96%	93%	100%
Transitional Kindergarten	71%	90%	100%
K-grade 3 or higher	57%	93%	75%
N	109	30	12
<u>Teaching children with special needs</u>			
Birth to two years	91%	85%	80%
3 and/or 4 years (Pre-K)	95%	93%	100%
Transitional Kindergarten	72%	85%	90%
K-grade 3 or higher	61%	85%	70%
N	101	27	10
<u>Teaching children from multiple cultural and ethnic backgrounds</u>			
Birth to two years	88%	94%	85%
3 and/or 4 years (Pre-K)	96%	97%	100%
Transitional Kindergarten	70%	90%	100%
K-grade 3 or higher	64%	94%	85%
N	115	31	13
<u>Teaching children who are dual language learners</u>			
Birth to two years	89%	82%	83%
3 and/or 4 years (Pre-K)	97%	96%	100%
Transitional Kindergarten	72%	89%	100%
K-grade 3 or higher	56%	86%	83%
N	106	28	12

Table A2-3: Required Coursework Related to Teaching and Curriculum: Age-Group Focus, by Degree Program

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
<u>Teaching children science skills</u>			
Birth to two years	71%	58%	60%
3 and/or 4 years (Pre-K)	98%	92%	90%
Transitional Kindergarten	63%	77%	80%
K-grade 3 or higher	35%	58%	70%
N	110	26	10
<u>Teaching children literacy skills</u>			
Birth to two years	79%	69%	60%
3 and/or 4 years (Pre-K)	98%	97%	90%
Transitional Kindergarten	66%	86%	80%
K-grade 3 or higher	37%	69%	70%
N	110	29	10
<u>Teaching children art</u>			
Birth to two years	78%	59%	67%
3 and/or 4 years (Pre-K)	96%	91%	89%
Transitional Kindergarten	65%	77%	89%
K-grade 3 or higher	39%	59%	78%
N	109	22	9
<u>Teaching children social studies</u>			
Birth to two years	72%	55%	56%
3 and/or 4 years (Pre-K)	98%	85%	89%
Transitional Kindergarten	66%	80%	78%
K-grade 3 or higher	37%	55%	67%
N	100	20	9
<u>Using play in the curriculum</u>			
Birth to two years	87%	77%	82%
3 and/or 4 years (Pre-K)	97%	97%	91%
Transitional Kindergarten	67%	90%	91%
K-grade 3 or higher	44%	74%	73%
N	115	31	11
<u>Supporting and extending children's physical skills</u>			
Birth to two years	86%	75%	70%
3 and/or 4 years (Pre-K)	98%	94%	90%
Transitional Kindergarten	67%	81%	90%
K-grade 3 or higher	41%	69%	80%
N	112	32	10

Table A2-3: Required Coursework Related to Teaching and Curriculum: Age-Group Focus, by Degree Program (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
<u>Supporting children's social development</u>			
Birth to two years	87%	84%	75%
3 and/or 4 years (Pre-K)	97%	97%	94%
Transitional Kindergarten	70%	91%	94%
K-grade 3 or higher	50%	81%	81%
N	115	32	16
<u>Implementing integrated curriculum</u>			
Birth to two years	81%	96%	73%
3 and/or 4 years (Pre-K)	97%	100%	91%
Transitional Kindergarten	65%	96%	91%
K-grade 3 or higher	38%	96%	82%
N	113	26	11

Table A2-4: Required Coursework Related to Teaching Skills in Early Childhood Settings: Age-Group Focus, by Degree Program

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
<u>Observation, assessment, and documentation to inform teaching and learning</u>			
Birth to two years	84%	84%	73%
3 and/or 4 years (Pre-K)	97%	94%	100%
Transitional Kindergarten	67%	75%	93%
K-grade 3 or higher	38%	72%	73%
N	116	32	15
<u>Classroom management</u>			
Birth to two years	82%	77%	71%
3 and/or 4 years (Pre-K)	97%	92%	100%
Transitional Kindergarten	68%	81%	100%
K-grade 3 or higher	32%	69%	79%
N	112	26	14
<u>How to use different teaching techniques</u>			
Birth to two years	84%	72%	71%
3 and/or 4 years (Pre-K)	97%	93%	100%
Transitional Kindergarten	66%	79%	93%
K-grade 3 or higher	35%	66%	71%
N	113	29	14

Appendix 3: Early Childhood Higher Education Faculty: Detailed Tables

Table A3-1: Coursework Taught Related to Child Development and Learning: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Knowledge about children's development in different domains (e.g., language development, cognitive development)</u>			
Birth to 2 years	83%	76%	75%
3 to 4 years	95%	86%	90%
K-3 or above	60%	77%	75%
N	235	66	40
<u>Development of children's early literacy skills</u>			
Birth to 2 years	81%	74%	74%
3 to 4 years	95%	84%	86%
K-3 or above	52%	72%	77%
N	216	57	35
<u>Development of children's mathematical and scientific understandings</u>			
Birth to 2 years	72%	51%	52%
3 to 4 years	92%	78%	86%
K-3 or above	46%	59%	59%
N	192	49	29
<u>Understanding the effects of culture, gender, class, and race on child development</u>			
Birth to 2 years	83%	72%	76%
3 to 4 years	94%	82%	85%
K-3 or above	63%	81%	83%
N	230	68	41
<u>Child development theory and its relationship to teaching</u>			
Birth to 2 years	84%	74%	76%
3 to 4 years	95%	82%	90%
K-3 or above	65%	82%	84%
N	233	65	38
<u>Understanding the effects of disability on child development</u>			
Birth to 2 years	81%	70%	72%
3 to 4 years	94%	80%	86%

K-3 or above	61%	72%	72%
N	205	54	36

Table A3-2: Coursework Taught Related to Teaching Diverse Child Populations: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Teaching children who are experiencing poverty</u>			
Birth to 2 years	79%	67%	74%
3 to 4 years	92%	85%	89%
K-3 or above	56%	93%	83%
N	199	54	35
<u>Teaching children with challenging behaviors</u>			
Birth to 2 years	75%	63%	68%
3 to 4 years	93%	82%	92%
K-3 or above	53%	85%	76%
N	203	54	37
<u>Teaching children from diverse cultural and ethnic backgrounds</u>			
Birth to 2 years	78%	70%	79%
3 to 4 years	91%	84%	92%
K-3 or above	62%	87%	84%
N	225	63	38
<u>Teaching children who are dual language learners</u>			
Birth to 2 years	77%	64%	71%
3 to 4 years	91%	86%	91%
K-3 or above	54%	86%	88%
N	198	55	34
<u>Teaching children with special needs</u>			
Birth to 2 years	76%	69%	71%
3 to 4 years	93%	82%	91%
K-3 or above	53%	89%	69%
N	197	45	35

Table A3-3: Coursework Taught Related to Teaching and Curriculum: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Teaching science skills to children</u>			
Birth to 2 years	67%	61%	67%
3 to 4 years	94%	88%	89%
K-3 or above	47%	64%	61%
<i>N</i>	159	33	18
<u>Teaching literacy skills to children</u>			
Birth to 2 years	73%	65%	71%
3 to 4 years	92%	88%	90%
K-3 or above	49%	71%	74%
<i>N</i>	190	49	31
<u>Teaching art to children</u>			
Birth to 2 years	68%	57%	61%
3 to 4 years	93%	86%	83%
K-3 or above	44%	60%	52%
<i>N</i>	160	35	23
<u>Teaching social studies to children</u>			
Birth to 2 years	67%	60%	59%
3 to 4 years	93%	93%	91%
K-3 or above	46%	70%	64%
<i>N</i>	156	30	22
<u>Using play in the curriculum</u>			
Birth to 2 years	78%	71%	81%
3 to 4 years	93%	86%	94%
K-3 or above	53%	76%	75%
<i>N</i>	221	55	36
<u>Supporting and extending children's physical skills</u>			
Birth to 2 years	76%	72%	74%
3 to 4 years	92%	83%	85%
K-3 or above	51%	72%	67%
<i>N</i>	207	46	27
<u>Supporting children's social development</u>			
Birth to 2 years	79%	71%	74%
3 to 4 years	94%	82%	92%
K-3 or above	57%	82%	69%
<i>N</i>	231	65	39

Table A3-3: Coursework Taught Related to Teaching and Curriculum: Age-Group Focus, by Degree Program (Continued)

<i>Topic</i>	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<i>Implementing integrated curriculum</i>			
Birth to 2 years	73%	64%	79%
3 to 4 years	92%	86%	91%
K-3 or above	49%	76%	70%
<i>N</i>	210	50	33

Table A3-4: Coursework Taught Related to Teaching Skills in Early Childhood Settings: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Observation, assessment, and documentation to inform teaching and learning</u>			
Birth to 2 years	77%	66%	73%
3 to 4 years	94%	86%	92%
K-3 or above	45%	73%	76%
<i>N</i>	212	56	37
<u>Classroom management</u>			
Birth to 2 years	72%	56%	66%
3 to 4 years	93%	83%	88%
K-3 or above	44%	79%	75%
<i>N</i>	189	48	32
<u>How to use different teaching techniques (e.g., planning, instructing, facilitating)</u>			
Birth to 2 years	72%	63%	68%
3 to 4 years	93%	85%	90%
K-3 or above	43%	77%	77%
<i>N</i>	201	48	31

Table A3-5: Professional Development Experiences in Last Three Years, by Degree Program

If participated in any professional development, topic of experience:

Topic of Professional Development Experience	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Strategies to help students who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill	9%	10%	11%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children in Kindergarten through grade 3 or higher	12%	14%	11%
Domains and sequences of mathematical development of young children	14%	14%	11%
Teaching practitioners to introduce explicit mathematical concepts through planned experiences	17%	12%	8%
California and national guidelines related to mathematical understanding in young children	17%	14%	11%
Theories of family engagement	18%	22%	25%
Organizational development	19%	22%	22%
Teaching practitioners to use technology with children	20%	31%	33%
Math related: Teaching practitioners to implement instructional strategies that support mathematical understanding in children from birth through age 2	20%	14%	14%
Early childhood systems and policy	21%	25%	28%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children ages 3 and 4 (Pre-K)	23%	17%	17%
Teaching adult students who are English language learners	25%	24%	22%
Theories of leadership	25%	20%	14%
Teaching practitioners to create mathematically rich environments for young children	28%	19%	14%
Strategies for engaging families in classroom and program activities	29%	31%	22%

Table A3-5: Professional Development Experiences in Last Three Years, by Degree Program (Continued)

Topic of Professional Development Experience	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching practitioners to work with children who are dual language learners	32%	32%	28%
Using technology to promote adult learning	34%	31%	25%
Child assessment (e.g., portfolios, using particular assessment tools such as the Work Sampling System)	34%	39%	33%
Early childhood teacher assessment (e.g., CLASS)	35%	27%	25%
Strategies for working with various family structures	35%	39%	39%
Teaching practitioners to work with families of children with special needs	35%	37%	36%
Strategies for working with families of various ethnic, racial and linguistic backgrounds	39%	41%	31%
Strategies and techniques for mentoring/coaching of adult students	39%	34%	25%
Strategies for engaging families in children's learning	40%	44%	44%
Early childhood program assessment (e.g., Environment Rating Scale)	42%	25%	31%
Teaching practitioners to work with children with special needs	43%	41%	44%
Teaching practitioners to work with children from diverse cultural backgrounds	47%	53%	50%
Other	13%	27%	25%
N	226	59	36

Table A3-6: Professional Development Topics that would be Helpful, by Degree Program

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Organizational development	19%	30%	15%
Early childhood systems and policy	21%	18%	18%
Early childhood program assessment (e.g., Environment Rating Scale)	22%	19%	23%
Teaching practitioners to work with children K-3 or higher	23%	26%	23%
Teaching practitioners to work with preschool-age children	25%	29%	21%
Child assessment (e.g., portfolios, Work Sampling System)	28%	26%	18%
Theories of family engagement	28%	37%	28%
Teaching practitioners to work with infants and toddlers	29%	27%	26%
Theories of leadership	30%	29%	18%
Mathematical development in young children	31%	23%	23%
Teaching practitioners to work with children from diverse cultural and ethnic backgrounds	33%	36%	39%
Early childhood teacher assessment (e.g., CLASS)	37%	25%	26%
Strategies and techniques for mentoring/coaching of adults	38%	36%	39%
Teaching economically diverse college students	41%	44%	49%
Teaching practitioners to use technology with children	41%	41%	46%
Teaching practitioners to work with families of children with special needs	44%	36%	31%
Teaching practitioners to work with children who are dual language learners	45%	41%	49%
Teaching practitioners to work with children with special needs	44%	41%	49%
Teaching culturally and ethnically diverse college students	52%	52%	51%
Using technology to promote adult learning	53%	40%	44%
Teaching linguistically diverse college students	57%	48%	54%
Other	0%	6%	3%
N	237	73	42

Appendix 4: Challenges Facing Early Childhood Degree Programs, and Additional Resources Needed: Family Engagement and Early Math

Table A4-1: Challenges Facing California Early Childhood Degree Programs, by Degree Program

	Associate Degree	Bachelor's Degree	Master's Degree
Lack of faculty expertise in the social/emotional development of young children	0%	0%	0%
Lack of course content focused on children younger than five	1%	9%	0%
Lack of faculty experience with working with diverse populations of college students	3%	5%	0%
Lack of faculty expertise in promoting literacy in young children	6%	5%	0%
Lack of faculty experience with working with diverse populations of young children	8%	0%	0%
Family engagement: Lack of faculty expertise in working with and engaging diverse populations of families	9%	0%	0%
Lack of ability to recruit students	14%	14%	54%
Lack of faculty expertise in teaching young children with special needs	19%	9%	0%
Lack of faculty expertise in science pedagogy for young children	20%	9%	0%
Lack of ability to support students in completing the program	23%	27%	23%
Lack of faculty expertise in teaching young children who are dual language learners	25%	9%	0%
Lack of faculty expertise in math pedagogy for young children	25%	14%	0%
Lack of access to quality clinical experience sites	26%	32%	15%
Lack of articulation between 2-year and 4-year college early childhood degree programs	29%	9%	8%
Lack of academic support for students for whom English is a second language	31%	23%	15%

Inequitable distribution of resources compared to other programs in the institution	46%	41%	54%
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Table A4-1: Challenges Facing California Early Childhood Degree Programs, by Degree Programs (Continued)

	Associate Degree	Bachelor's Degree	Master's Degree
Lack of recognition of the value of early childhood from within the department or school	53%	36%	39%
Faculty administrative responsibilities that interfere with time with students (e.g., lack of time for teaching)	56%	59%	62%
Other	33%	36%	39%
N	80	22	13

Table A4-2: Importance of Including Selected Topics in Early Childhood Higher Education Programs: Percentages of Faculty Members Reporting “Very Important,” by Age Group and Degree Program

Topic	Birth to 2 years	3 and/or 4 years	TK	K-grade 3 or higher
Associate Degree Faculty				
Understanding the domains and sequences of mathematical knowledge in young children and how to promote their mathematical understanding and ability to solve problems (N=248-250)	33%	67%	82%	88%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language (N=249-250)	62%	82%	88%	92%
Understanding socio-emotional development, its relationship to learning and how to support children's socio-emotional skills (N=249-251)	90%	95%	96%	91%
Understanding normal and atypical motor development in young children and its relationship to learning and how to facilitate their motor skills (N=250-251)	87%	85%	78%	69%
Understanding and implementing an integrated strategy to engage families in on-going and reciprocal partnerships and its relationship to outcomes for children (n=250-251)	93%	91%	90%	87%
Bachelor's Degree Faculty				
Understanding the domains and sequences of mathematical knowledge in young children and how to promote their mathematical understanding and ability to solve problems (N=75)	39%	67%	80%	93%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language (N=75)	59%	83%	93%	96%
Understanding socio-emotional development, its relationship to learning and how to support children's socio-emotional skills (N=75)	93%	93%	96%	91%

Table A4-2: Importance of Including Selected Topics in Early Childhood Higher Education Programs: Percentages of Faculty Members Reporting “Very Important,” by Age Group and Degree Program (Continued)

Topic	Birth to 2 years	3 and/or 4 years	TK	K-grade 3 or higher
Bachelor's Degree Faculty				
Understanding normal and atypical motor development in young children and its relationship to learning and how to facilitate their motor skills (N=75)	87%	77%	77%	68%
Understanding and implementing an integrated strategy to engage families in on-going and reciprocal partnerships and its relationship to outcomes for children (N=74-75)	92%	89%	89%	89%
Master's Degree Faculty				
Understanding the domains and sequences of mathematical knowledge in young children, and how to promote their mathematical understanding and ability to solve problems (N=42)	36%	67%	83%	91%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language (N=42)	62%	83%	95%	93%
Understanding socio-emotional development, its relationship to learning and how to support children's socio-emotional skills (N=42)	93%	95%	95%	91%
Understanding normal and atypical motor development in young children and its relationship to learning and how to facilitate their motor skills (N=42)	91%	86%	74%	60%
Understanding and implementing an integrated strategy to engage families in on-going and reciprocal partnerships and its relationship to outcomes for children (N=42)	88%	83%	81%	81%

Table A4-3: Family Engagement: Age-Group Focus, by Degree Level

If topic required for the degree program, age group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<u>Theories of family engagement</u>				
Birth to two years	91%	91%	86%	N/A
3 and/or 4 years (Pre-K)	98%	94%	93%	31%
Transitional Kindergarten	73%	78%	93%	46%
K-grade 3 or higher	59%	88%	93%	97%
N	108	32	14	35
<u>Working with various family structures</u>				
Birth to two years	91%	91%	80%	N/A
3 and/or 4 years (Pre-K)	98%	94%	93%	34%
Transitional Kindergarten	72%	78%	93%	49%
K-grade 3 or higher	59%	88%	87%	97%
N	113	32	15	35
<u>Working with families of children with special needs</u>				
Birth to two years	90%	93%	77%	N/A
3 and/or 4 years (Pre-K)	98%	93%	92%	37%
Transitional Kindergarten	72%	86%	92%	59%
K-grade 3 or higher	60%	83%	85%	98%
N	104	29	13	46
<u>Working with families of various ethnic, racial, and linguistic backgrounds</u>				
Birth to two years	90%	91%	81%	N/A
3 and/or 4 years (Pre-K)	97%	94%	94%	33%
Transitional Kindergarten	72%	88%	94%	52%
K-grade 3 or higher	61%	91%	88%	98%
N	115	32	16	46
<u>Engaging families in classroom, program and/or school activities</u>				
Birth to two years	89%	86%	77%	N/A
3 and/or 4 years (Pre-K)	99%	93%	92%	18%
Transitional Kindergarten	71%	86%	85%	41%
K-grade 3 or higher	53%	82%	77%	98%
N	113	28	13	44
<u>Effective communication strategies with families</u>				
Birth to two years	90%	90%	79%	N/A
3 and/or 4 years (Pre-K)	98%	93%	93%	15%
Transitional Kindergarten	72%	87%	86%	41%
K-grade 3 or higher	55%	83%	79%	98%
N	114	30	14	46

Table A4-3: Family Engagement: Age-Group Focus, by Degree Level (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<u>Utilizing technology to communicate with families</u>				
Birth to two years	83%	80%	88%	N/A
3 and/or 4 years (Pre-K)	99%	90%	88%	13%
Transitional Kindergarten	75%	85%	75%	33%
K-grade 3 or higher	55%	85%	75%	98%
N	76	20	8	40
<u>Working with families to help them enhance their children's learning at home</u>				
Birth to two years	86%	86%	71%	N/A
3 and/or 4 years (Pre-K)	98%	93%	93%	17%
Transitional Kindergarten	70%	89%	86%	39%
K-grade 3 or higher	51%	89%	71%	98%
N	103	28	14	41
<u>Using knowledge about children's families in curriculum planning</u>				
Birth to two years	89%	79%	73%	N/A
3 and/or 4 years (Pre-K)	98%	93%	91%	12%
Transitional Kindergarten	69%	86%	82%	37%
K-grade 3 or higher	50%	82%	73%	98%
N	113	28	11	41
<u>Negotiating conflicts and differences between families and teachers</u>				
Birth to two years	90%	81%	77%	N/A
3 and/or 4 years (Pre-K)	99%	89%	92%	12%
Transitional Kindergarten	70%	89%	85%	39%
K-grade 3 or higher	50%	85%	69%	97%
N	112	26	13	33
<u>Building community partnerships</u>				
Birth to two years	93%	80%	73%	N/A
3 and/or 4 years (Pre-K)	99%	92%	93%	19%
Transitional Kindergarten	74%	80%	87%	36%
K-grade 3 or higher	57%	84%	73%	97%
N	110	25	15	36
<u>Child referrals to community resources</u>				
Birth to two years	90%	87%	77%	N/A
3 and/or 4 years (Pre-K)	98%	93%	100%	20%
Transitional Kindergarten	70%	87%	92%	43%
K-grade 3 or higher	58%	80%	69%	98%
N	113	30	13	40

Table A4-3: Family Engagement: Age-Group Focus, by Degree Level (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<i>Utilizing community resources</i>				
Birth to two years	90%	85%	77%	N/A
3 and/or 4 years (Pre-K)	97%	93%	100%	20%
Transitional Kindergarten	70%	85%	92%	39%
K-grade 3 or higher	56%	89%	69%	98%
N	115	27	13	41

Table A4-4: Coursework Taught Related to Family Engagement: Age-Group Focus

If topic taught in past two years, age-group focus of the coursework:

	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Theories and strategies of family engagement</u>			
Birth to 2 years	81%	74%	77%
3 to 4 years	93%	86%	90%
K-3 or above	56%	86%	87%
N	210	62	31
<u>Working with various family structures (e.g., single-parent, same-sex parents, opposite-sex parents, extended/multi-generational families)</u>			
Birth to 2 years	81%	71%	79%
3 to 4 years	95%	86%	91%
K-3 or above	57%	90%	88%
N	209	62	33
<u>Working with families of children with special needs</u>			
Birth to 2 years	80%	63%	77%
3 to 4 years	92%	80%	90%
K-3 or above	53%	85%	81%
N	201	54	31
<u>Working with families of various ethnic, racial, and linguistic backgrounds</u>			
Birth to 2 years	80%	72%	79%
3 to 4 years	93%	86%	88%
K-3 or above	54%	88%	88%
N	212	64	33
<u>Engaging families in classroom, program, and/or school activities</u>			
Birth to 2 years	78%	68%	79%
3 to 4 years	93%	86%	88%
K-3 or above	54%	84%	88%
N	215	57	34
<u>Effective communication strategies with families</u>			
Birth to 2 years	79%	75%	83%
3 to 4 years	93%	88%	91%
K-3 or above	55%	84%	89%
N	214	64	35

Table A4-4: Coursework Taught Related to Family Engagement: Age-Group Focus (Continued)

	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Utilizing technology to communicate with families</u>			
Birth to 2 years	74%	67%	79%
3 to 4 years	92%	86%	92%
K-3 or above	49%	84%	92%
<i>N</i>	165	43	24
<u>Working with families to help them enhance their children's learning at home</u>			
Birth to 2 years	76%	76%	80%
3 to 4 years	92%	87%	93%
K-3 or above	53%	82%	93%
<i>N</i>	195	55	30
<u>Using knowledge about children's families in curriculum planning</u>			
Birth to 2 years	78%	69%	79%
3 to 4 years	94%	90%	93%
K-3 or above	49%	81%	90%
<i>N</i>	202	48	29
<u>Negotiating conflicts and differences in values between families and teachers</u>			
Birth to 2 years	79%	75%	80%
3 to 4 years	93%	87%	93%
K-3 or above	51%	83%	83%
<i>N</i>	200	52	30
<u>Building community partnerships</u>			
Birth to 2 years	80%	73%	82%
3 to 4 years	94%	85%	93%
K-3 or above	53%	89%	89%
<i>N</i>	197	52	28
<u>Child referrals to community resources</u>			
Birth to 2 years	80%	75%	78%
3 to 4 years	95%	87%	88%
K-3 or above	54%	90%	88%
<i>N</i>	202	52	32
<u>Utilizing community resources to help families</u>			
Birth to 2 years	81%	73%	81%
3 to 4 years	96%	84%	90%
K-3 or above	56%	91%	90%
<i>N</i>	207	56	31

**Table A4-5: Development of Children’s Mathematical Understanding:
Age-Group Focus, by Degree Level**

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<u>Number sense for children</u>				
Birth to two years	75%	74%	73%	N/A
3 and/or 4 years (Pre-K)	98%	96%	100%	24%
Transitional Kindergarten	64%	78%	100%	50%
K-grade 3 or higher	24%	78%	64%	96%
N	103	23	11	46
<u>Operations and algebraic thinking for children</u>				
Birth to two years	64%	47%	73%	N/A
3 and/or 4 years (Pre-K)	96%	79%	100%	13%
Transitional Kindergarten	67%	74%	100%	37%
K-grade 3 or higher	24%	68%	64%	96%
N	90	19	11	46
<u>Measurement skills for children</u>				
Birth to two years	66%	47%	73%	N/A
3 and/or 4 years (Pre-K)	99%	95%	100%	15%
Transitional Kindergarten	65%	74%	91%	41%
K-grade 3 or higher	24%	63%	55%	96%
N	100	19	11	46
<u>Geometry skills for children</u>				
Birth to two years	65%	61%	73%	N/A
3 and/or 4 years (Pre-K)	97%	94%	100%	13%
Transitional Kindergarten	67%	78%	91%	42%
K-grade 3 or higher	25%	61%	64%	96%
N	96	18	11	45
<u>Children's mathematical reasoning/practices</u>				
Birth to two years	71%	58%	73%	N/A
3 and/or 4 years (Pre-K)	99%	96%	100%	15%
Transitional Kindergarten	66%	79%	100%	44%
K-grade 3 or higher	24%	71%	64%	94%
N	99	24	11	46

Table A4-6: Teaching Children Math Skills: Age-Group Focus, by Degree Level

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<u>Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge</u>				
Birth to two years	77%	84%	73%	N/A
3 and/or 4 years (Pre-K)	99%	96%	100%	19%
Transitional Kindergarten	65%	84%	100%	44%
K-grade 3 or higher	22%	68%	55%	96%
N	101	25	11	48
<u>Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning</u>				
Birth to two years	77%	80%	75%	N/A
3 and/or 4 years (Pre-K)	97%	92%	100%	15%
Transitional Kindergarten	65%	80%	100%	44%
K-grade 3 or higher	24%	64%	67%	96%
N	102	25	12	48
<u>Using everyday activities as natural vehicles for developing children's mathematical knowledge</u>				
Birth to two years	79%	80%	75%	N/A
3 and/or 4 years (Pre-K)	96%	96%	100%	15%
Transitional Kindergarten	64%	80%	100%	44%
K-grade 3 or higher	25%	68%	58%	96%
N	104	25	12	48
<u>Introducing explicit mathematical concepts through planned experiences</u>				
Birth to two years	66%	70%	73%	N/A
3 and/or 4 years (Pre-K)	98%	95%	100%	9%
Transitional Kindergarten	66%	80%	91%	39%
K-grade 3 or higher	22%	65%	64%	100%
N	95	20	11	46
<u>Creating a mathematically rich environment</u>				
Birth to two years	72%	68%	73%	N/A
3 and/or 4 years (Pre-K)	96%	95%	100%	11%
Transitional Kindergarten	63%	79%	91%	38%
K-grade 3 or higher	22%	53%	55%	100%
N	100	19	11	47

Table A4-6: Teaching Children Math Skills: Age-Group Focus, by Degree Level (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree	Multiple Subject Credential
<u>Supporting English learners in developing mathematical knowledge as they concurrently acquire English</u>				
Birth to two years	74%	56%	73%	N/A
3 and/or 4 years (Pre-K)	97%	81%	100%	8%
Transitional Kindergarten	68%	81%	100%	40%
K-grade 3 or higher	26%	63%	64%	100%
N	76	16	11	48
<u>Developing children's mathematical vocabulary</u>				
Birth to two years	70%	68%	73%	N/A
3 and/or 4 years (Pre-K)	98%	90%	100%	8%
Transitional Kindergarten	65%	79%	100%	42%
K-grade 3 or higher	21%	58%	64%	98%
N	98	19	11	48
<u>Assessing children's mathematical development</u>				
Birth to two years	69%	65%	73%	N/A
3 and/or 4 years (Pre-K)	98%	95%	100%	8%
Transitional Kindergarten	65%	85%	100%	40%
K-grade 3 or higher	22%	70%	55%	100%
N	93	20	11	48

Table A4-7: Capability of Teaching Coursework on the Development of Children's Mathematical Understanding, as Reported by Faculty Members, by Age Group and Degree Level

Early Math Topic	Birth to 2 years	3 to 4 years	TK	K-grade 3 or higher
Associate Degree Faculty				
Number sense for children (N=248)	63%	74%	63%	35%
Operations and algebraic thinking for children (N=245)	45%	63%	51%	31%
Measurement skills for children (N=248)	55%	75%	60%	39%
Geometry skills for children (N=246)	52%	69%	57%	35%
Children's mathematical reasoning/ practices (N=248)	57%	75%	59%	36%
Bachelor's Degree Faculty				
Number sense for children (N=75)	41%	53%	48%	41%
Operations and algebraic thinking for children (N=75)	31%	44%	37%	33%
Measurement skills for children (N=75)	43%	51%	44%	40%
Geometry skills for children (N=75)	37%	51%	44%	36%
Children's mathematical reasoning/ practices (N=75)	43%	51%	45%	43%
Master's Degree Faculty				
Number sense for children (N=42)	41%	60%	62%	50%
Operations and algebraic thinking for children (N=42)	38%	52%	55%	41%
Measurement skills for children (N=42)	43%	60%	60%	48%
Geometry skills for children (N=42)	45%	60%	62%	43%
Children's mathematical reasoning/ practices (N=42)	45%	57%	64%	50%

Table A4-8: Capability of Teaching Coursework on Teaching Children Math Skills, as Reported by Faculty Members, by Age Group and Degree Level

Early Math Topic	Birth to 2 years	3 -4 years	TK	K-grade 3 or higher
Associate Degree Faculty				
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=245)	66%	81%	63%	42%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=245)	65%	80%	65%	43%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=245)	67%	80%	66%	45%
Introducing explicit mathematical concepts through planned experiences (N=244)	53%	76%	63%	38%
Creating a mathematically rich environment (N=244)	64%	78%	64%	42%
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=243)	44%	60%	48%	27%
Developing children's mathematical vocabulary (N=243)	59%	77%	63%	39%
Assessing children's mathematical development (N=242)	50%	71%	57%	33%
Bachelor's Degree Faculty				
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=75)	57%	69%	56%	41%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=75)	57%	68%	59%	43%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=75)	59%	69%	57%	48%
Introducing explicit mathematical concepts through planned experiences (N=75)	49%	64%	51%	39%
Creating a mathematically rich environment (N=75)	56%	68%	57%	41%

Table A4-8: Capability of Teaching Coursework on Teaching Children Math Skills, as Reported by Faculty Members, by Age Group and Degree Level (Continued)

Early Math Topic	Birth to 2 years	3 -4 years	TK	K-grade 3 or higher
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=75)	43%	51%	39%	33%
Developing children's mathematical vocabulary (N=75)	56%	65%	59%	40%
Assessing children's mathematical development (N=75)	47%	60%	49%	36%
Master's Degree Faculty				
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=42)	52%	71%	67%	48%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=42)	55%	74%	69%	48%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=42)	57%	74%	69%	52%
Introducing explicit mathematical concepts through planned experiences (N=42)	48%	62%	55%	48%
Creating a mathematically rich environment (N=42)	52%	67%	62%	43%
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=42)	45%	60%	52%	38%
Developing children's mathematical vocabulary (N=42)	55%	67%	64%	45%
Assessing children's mathematical development (N=42)	52%	64%	64%	48%

Table A4-9: Coursework Taught Related to Early Math Skills: Age-Group Focus

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Supporting English learners in developing mathematical knowledge as they concurrently acquire English</u>			
Birth to 2 years	60%	47%	58%
3 to 4 years	93%	80%	84%
K-3 or above	30%	63%	63%
<i>N</i>	117	30	19
<u>Assessing children's mathematical development</u>			
Birth to 2 years	57%	67%	68%
3 to 4 years	94%	82%	82%
K-3 or above	33%	59%	64%
<i>N</i>	126	27	22
<u>Introducing explicit mathematical concepts through planned experiences</u>			
Birth to 2 years	55%	48%	56%
3 to 4 years	95%	83%	83%
K-3 or above	35%	66%	56%
<i>N</i>	138	29	18
<u>Creating a mathematically rich environment</u>			
Birth to 2 years	62%	54%	68%
3 to 4 years	94%	83%	86%
K-3 or above	37%	66%	64%
<i>N</i>	155	35	22
<u>Developing children's mathematical vocabulary</u>			
Birth to 2 years	61%	56%	64%
3 to 4 years	94%	78%	82%
K-3 or above	33%	66%	64%
<i>N</i>	155	32	22
<u>Building on natural interest in mathematics and a child's intuitive and informal mathematical knowledge</u>			
Birth to 2 years	65%	56%	58%
3 to 4 years	93%	81%	83%
K-3 or above	37%	67%	67%
<i>N</i>	166	36	24

Table A4-9: Coursework Taught Related to Early Math Skills: Age-Group Focus (Continued)

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
<u>Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning</u>			
Birth to 2 years	63%	58%	65%
3 to 4 years	94%	83%	83%
K-3 or above	38%	63%	70%
<i>N</i>	170	40	23
<u>Using everyday activities as natural vehicles for developing children's mathematical knowledge</u>			
Birth to 2 years	65%	56%	64%
3 to 4 years	92%	82%	88%
K-3 or above	40%	69%	68%
<i>N</i>	183	39	25

Table A4-10: Interest in Professional Development on Early Math

Professional Development Topic	1- Least interested	2	3	4-Most interested	Total
Associate Degree Faculty					
Number sense (counting and cardinality) for children (N=236)	32%	25%	25%	19%	100%
Measurement skills for children (N=238)	25%	29%	27%	20%	100%
Geometry skills for children (N=237)	21%	29%	30%	20%	100%
Operations and algebraic thinking for children (N=237)	20%	25%	29%	26%	100%
Children's mathematical reasoning (N=240)	18%	19%	35%	28%	100%
Assessing children's mathematical understanding (N=240)	16%	20%	34%	30%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=240)	15%	15%	31%	39%	100%
Creating a mathematically rich learning environment (N=239)	16%	14%	31%	40%	100%
Integrating mathematical understanding into children's daily activities (N=240)	18%	13%	28%	41%	100%
Bachelor's Degree Faculty					
Number sense (counting and cardinality) for children (N=69)	30%	17%	32%	20%	100%
Measurement skills for children (N=69)	26%	22%	32%	20%	100%
Geometry skills for children (N=68)	28%	18%	37%	18%	100%
Operations and algebraic thinking for children (N=69)	30%	16%	30%	23%	100%
Children's mathematical reasoning (N=67)	22%	18%	31%	28%	100%
Assessing children's mathematical understanding (N=70)	23%	13%	30%	34%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=69)	23%	12%	29%	36%	100%
Creating a mathematically rich learning environment (N=239)	23%	10%	23%	44%	100%
Integrating mathematical understanding into children's daily activities (N=69)	25%	13%	29%	33%	100%
Master's Degree Faculty					
Number sense (counting and cardinality) for children (N=38)	37%	18%	34%	11%	100%
Measurement skills for children (N=38)	37%	21%	32%	11%	100%

**Table A4-10: Interest in Professional Development on Early Math
(Continued)**

Professional Development Topic	1- Least interested	2	3	4-Most interested	Total
Geometry skills for children (N=38)	34%	21%	34%	11%	100%
Operations and algebraic thinking for children (N=38)	37%	8%	32%	24%	100%
Children's mathematical reasoning (N=37)	24%	19%	35%	22%	100%
Assessing children's mathematical understanding (N=39)	18%	10%	39%	33%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=38)	21%	11%	37%	32%	100%
Creating a mathematically rich learning environment (N=39)	23%	8%	36%	33%	100%
Integrating mathematical understanding into children's daily activities (N=39)	26%	8%	36%	31%	100%

Table A4-11: Interest in Professional Development on Family Engagement

Professional Development Topic	1- Least interested	2	3	4-Most interested	Total
Associate Degree Faculty					
Different kinds of families (e.g., gay, biracial, foster) (N=242)	14%	24%	25%	36%	100%
Strategies to interact with families who differ linguistically, economically, and culturally (N=243)	9%	16%	33%	43%	100%
Working with families of children with special needs (N=242)	10%	17%	28%	45%	100%
Negotiating conflict with families (N=241)	11%	17%	31%	42%	100%
Engaging families in classroom and program/school activities (N=242)	10%	19%	32%	39%	100%
Effective communication strategies with families (N=241)	10%	20%	30%	40%	100%
Techniques for gathering knowledge about children's families (N=24)	10%	23%	25%	41%	100%
Utilizing technology to communicate and interact with families (N=241)	12%	20%	28%	40%	100%
Incorporating knowledge about families in curriculum planning (N=242)	11%	18%	31%	40%	100%
Working with families to extend children's learning at home (N=242)	10%	21%	29%	41%	100%
Using community resources to support families (n=242)	12%	25%	24%	40%	100%
Theories and strategies of family engagement (N=242)	10%	20%	32%	38%	100%
Bachelor's Degree Faculty					
Different kinds of families (e.g., gay, biracial, foster) (N=70)	11%	16%	34%	39%	100%
Strategies to interact with families who differ linguistically, economically, and culturally (N=79)	6%	13%	33%	49%	100%

Table A4-11: Interest in Professional Development on Family Engagement (Continued)

Professional Development Topic	1- Least interested	2	3	4-Most interested	Total
Working with families of children with special needs (N=70)	6%	21%	30%	43%	100%
Negotiating conflict with families (N=70)	9%	13%	36%	43%	100%
Engaging families in classroom and program/school activities (N=68)	10%	16%	32%	41%	100%
Effective communication strategies with families (N=68)	7%	13%	41%	38%	100%
Techniques for gathering knowledge about children's families (N=68)	12%	18%	35%	35%	100%
Utilizing technology to communicate and interact with families (N=69)	10%	16%	45%	29%	100%
Incorporating knowledge about families in curriculum planning (N=68)	12%	16%	40%	32%	100%
Working with families to extend children's learning at home (N=69)	7%	15%	30%	48%	100%
Using community resources to support families (N=68)	9%	21%	31%	40%	100%
Theories and strategies of family engagement (N=71)	10%	13%	31%	47%	100%
Master's Degree Faculty					
Different kinds of families (e.g., gay, biracial, foster) (n=38)	11%	16%	45%	29%	100%
Strategies to interact with families who differ linguistically, economically, and culturally (N=39)	5%	13%	41%	41%	100%
Working with families of children with special needs (N=38)	5%	16%	45%	34%	100%
Negotiating conflict with families (N=38)	11%	13%	37%	40%	100%
Engaging families in classroom and program/school activities (N=37)	11%	19%	27%	43%	100%

Table A4-11: Interest in Professional Development on Family Engagement (Continued)

Professional Development Topic	1- Least interested	2	3	4-Most interested	Total
Effective communication strategies with families (N=37)	5%	8%	41%	46%	100%
Techniques for gathering knowledge about children's families (N=37)	5%	22%	32%	41%	100%
Utilizing technology to communicate and interact with families (N=38)	8%	16%	40%	37%	100%
Incorporating knowledge about families in curriculum planning (N=37)	8%	22%	30%	41%	100%
Working with families to extend children's learning at home (N=37)	5%	16%	35%	43%	100%
Using community resources to support families (N=37)	8%	14%	35%	43%	100%
Theories and strategies of family engagement (N=39)	8%	8%	36%	49%	100%

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